THE Exact Dealer:

Being an useful *Companion* for all *Traders*.

In Two Parts.

I. Containing the *Growth*, *Manufacture*, and *Trade* of all the Counties of *England* and *Wales* in general. The Trade of *London* in particular, in it self and with other Nations. A Description of *Weights*, *Measures* and *Coins*, with their Value, as compared with Foreign Coins, and to know the True from Counterfeit; as also the Estimate of Sundry Commodities. Instructions in *Arithmetick* and keeping Books of Accounts, with the Method of *Discount*, *Partnership*, *Landing* and *Weighing Goods*, *Entering* at the *Custom-house*, with the Duties on several Occasions; *Bills* of *Exchange*, with most sorts of *Bills* and *Writings* appertaining to Trade. The easiest way of getting in Debts. An exact Account of the *Fairs* and *Markets* of *England*, with a Description of the *Miles* and *Roads*. *Tables* of *Accounts* ready cast up, of *Weights*, *Measures*, *Coins*, *Interest* and *Tides*, with several other things exceeding useful.

II. Containing Directions for Measuring *Carpenters*, *Joiners*, *Painters*, *Plasterers*, *Glasiers*, *Bricklayers* Work, &c. Superficial or Solid, ; as also for *Surveying Land*, and Measuring Stackwood, or any Timber: Together with the exact Rule of *Gauging Casks*, *Ships*, &c. and many other Matters, &c. not before made Publick.

By *J. H.* Author of the *Secretary's Guide*.

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Novemb. 19.
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THE PREFACE TO THE READER.

Reader,

HAving conſidered the great want of a Book of univerſal Inſtruction in Trade, and Managment of Affairs, I thought it highly neceſſary for the Benefit of Traders, and Artiſts of ſundry kinds, to turn my Endeavours that way, that by compiling what muſt be undeniably uſeful and neceſſary, I might the more boldly recommend it to the Induſtrious part of Men, whoſe diſcerning Judgments (if in any thing I have failed of my deſtin'd aim, in ſerving and obliging them) may caſt a friendly cenſure on this my Undertaking: Nor let any before they have peruſed and ſeriouſly conſidered it, judge raſhly, and proceed to condemn this Book, by fanſying that ſo ſmall a Volumn can never effectually contain what it promiſes in the Title

Page, leaſt when they find they have been over haſty in cenſuring, they are forced, at leaſt Tacitly, to acknowledge the pains that I have taken to advantage them, are but ſlenderly deſerved by the too Cenſorious, whoſe firſt Objections, for the moſt part, border upon Ingratitude. However, let me tell the World (or that part of it whoſe Affairs it moſtly may concern) that, if I may preſume to judge in my own caſe, (or indeed my good will towards the Induſtrious, may freely diſcharge it ſelf) that a more uſeful Book is no where to be found, relating to Trade and Buſineſs, no not in the largeſt of Volumes, if taken ſingly. And ſo referring you to a fuller account of it in the *Introduction*, I take my leave, and am,

Kind Reader,

Your faithful Friend and Servant,

J. H.

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Errata. Page 61, &c. line 21. for *Fret* r. *Tret.*

THE

THE INTRODUCTION.

AS *Profit* and *Advantage* are moſt deſirable, ſo are there ſundry ways (without runing beyond the bounds of Honeſty) to acquire them; yet thoſe ways require *Underſtanding*, *Prudence*, *Diligence*, *Caution*, and *Induſtry*; for without ſome or all of theſe, Men may hope and expect in vain, unleſs Fortune (which does not frequently happen) ſhould caſt Riches upon them, beyond their Expectation, and ſurprize them with her Bounties, when they ſuppoſed ſhe had altogether neglected and forſaken them; as by the Death of Relations, fortunate Marriage, return of Ventures from Sea, the expiration of Lives in Leaſes or Tenure of Lands; with many the like Accidents or advantageous Chances, which for brevities ſake, and as being little to my purpoſe, I ſhall wave; conſidering my main aim and drift is, to admoniſh and direct Men how to improve themſelves, and riſe by Induſtry in Trading and manageing Affairs. As firſt with *Underſtanding* rightly to be knowing in what they undertake, that they, by entering upon that they underſtand not, be not lyable to be Cheated and Impoſed upon, by ſuch as lie upon the catch, to take advantage of their weakneſs, in knowlege of thoſe things they pretend to. Secondly, *Prudence* in knowing how to manage and turn their Affairs and Undertakings to the beſt advantage, whereby

the Underſtanding will be improved, and Over-reaching prevented; for even the Crafty, where they perceive a Man ſufficiently prudent to countermine them in their policies and dark contrivances, will forbear (as much as may be) to attempt any thing, where they are not likely to ſucceed, but rather turn their force upon ſome weaker fort, more liable to be undermined or battered down by inſinuations, ſpecious pretences of friendſhip and aſſiſtance, and many the like ſtratagems, by which they too frequently intereſs themſelves in the Affairs of young Men eſpecially, and often lay a foundation upon their ruine, which, indeed, is the thing they at firſt aim at, and can be no way better prevented than by a *Prudent* regard of Buſineſs and ſelf-management of Affairs in the beginning of our undertakings; for when we are once well ſetled and grounded in any occupation, the next thing, which is diligence, will ſoon ſet us (unleſs ſome extraordinary accident happen) above the reach or danger of a Miſcarriage: And to keep off any ſuch thing, *Caution* muſt be uſed how we ingage or intereſs our ſelves in other mens affairs, by being Bound, buying in Partnerſhip, undertaking to be Executors, venturing conſiderable matters to Sea, taking falſe Mortgages, or Purchaſing where there is no good Title, with many things of the like nature that require caution, and ought not raſhly to be undertaken. The fifth thing to be conſidered is *Induſtry*, which indeed is the ſifter to Diligence, but yet exceeds her by ſome degrees on this account; for a Man may be Diligent in keeping what he has, and yet not Induſtrious to get more: A Man may be diligent in the ſtation or calling wherein he is placed, yet not induſtrious to advance himſelf, by puſhing forward and laying hold of the leaſt opportunity that offers it ſelf for his promotion; and this is indeed the reaſon

ſon why many ſpend their lives in a mean condition, becauſe contenting themſelves to labour in their firſt undertaking, how low or Mechanick ſoever it is, they will not venture out of it, though apparent advantage oppoſes it ſelf, leaſt like a Fiſh taken out of its proper Element, not being long able to breath in the thinner Air, they ſhould faint ſo much in their new undertaking, that they would not be able, that failing, to make a retreat to the firſt; and therefore conclude they had better be upon ſure ground, than run a hazard, where double the advantage will be the reward of their Induſtry, if they are ſucceſsful, but nothing (as they fondly propoſe to themſelves) if they chance to miſcarry: Some again there are that hold, that if a Man be deſtined to proſper and grow Rich in the World, he ſhall have his lucky day; Riches ſhall flow in upon him by means unſought, and ways unexpected: and on the contrary, thoſe that are doomed to be poor, ſtrive againſt the Wind and Tide in vain; for though they are both diligent and induſtrious, *riſe early, ſit up late, and eat the Bread of Carefulneſs*, yet they ſhall (after all that) find themſelves in the ſame condition as if they had lived ſupinely all their days. But this Rule holds not good, as is frequently demonſtrated, and is for the moſt part the Sluggards plea, who living poor by reaſon of his Eaſe and Idleneſs, attributes (Atheiſt like) all things to Fate and Chance, when, on the contrary, *Solomon* affirms, That *the diligent hand ſhall make Rich*; *but the ſluggard ſhall have ſcarcity of Bread*. Much more of this kind I might inſtance, for the *inſtruction* and *incouragement* of thoſe that are willing to ſtrive in their Callings; for as it is moſt commendable, ſo it contributes moſt to their temporal Felicity. But this being ſomewhat a digreſſion from my purpoſe, I now

proceed to tell the *Reader*, That I have compiled this Book chiefly for the advantage of Traders, and have filled it with ſuch variety as well of things uſeful and abſolutely neceſſary to be known (by thoſe that would thrive) as other matters of weight and moment, by which thoſe that are already knowing may be improved. Nor have I ſpared any pains to reduce them to, and render them in ſuch a method as may make them eaſie to an indifferent Capacity, the particulars of which are too various and numerous to be mentioned in an *Introduction*; however, in general I take the boldneſs to affirm, That I have omitted nothing that I conceived might be in any ſort convenient to be known, relating to Trade or its dependencies: So that I may term it, *A Store-houſe of Inſtructions*, or *ſeaſonable Directions, compiled to ſupply the Trading part of the Nation, with thoſe Rules, &c. that have hitherto been ſo much wanting, and with earneſtneſs ſought after and deſired*; for would you be knowing in the *Growth*, *Commodities* and *Manufactures* of the Land, you may here inform your ſelf, and find the *Weights*, *Meaſures* and diſtinctions by which they are Bought and Vended, with their true Value and Goodneſs; here you may be Inſtructed how to State and Manage your *Accounts*, and know the true ground of *Arithmetick*, in an eaſie method, and what ought to be conſidered and obſerved in your Dealings, to create and keep a right underſtanding; what the ſecureſt and moſt legal way your *Books* ought to be kept, and your *Bills* made and drawn, how the manner and advantage accruing by *Diſcount*; and what is to be conſidered in Returning *Monies* upon *Bills of Exchange* or otherwiſe; and how thoſe or any the like *Bills* ought to be conſidered, in caſe of Refuſal or Delay, to ſecure your ſelf againſt the Drawer or Aſſigner, *&c.* here you may be inſtructed

ſtructed to buy Goods in *Partnerſhip*, *Lot* or *Auction*, that ſo you may not be liable to be out-witted or over-reached, by being ignorant of what is chiefly to be obſerved therein; as alſo what advantages may accrue thereby, and the Allowances made in ſundry reſpects: If you would know the true worth and value of *Engliſh Coins*, and their being compared with many of *Europe*, and how to detect and diſcover *Falſe* and *Counterfeit Coins*, this *Book* will direct you; nor will you fail in it to meet with the *exact Intereſt* due upon any Summ of Money for *Days*, *Weeks*, *Months* or *Years*, *&c.* or a *Perpetual Almanack*, to ſave you the charge and trouble of a yearly renewal; nor are you left without a help to know the *Tide's Courſe* and *Motion*, in relation to its *Flowing* or *Ebbing* in the Havens or Ports of *England* and *Wales*, *&c.* with a new and more *Exact Account* of the *Fairs* and *Market-Days*, their time and place; and that it may not be wanting to the Ignoranter ſort, who are unſkilful in larger *Weights* and *Meaſures*, by Subſtracting them or Multiplying the leſs, I have laboured to give them that Knowledge by plain demonſtration. I have given likewiſe the *Size* of *Caſks* and their *Gauging*; and what elſe is neceſſary to be known in that affair; with the true *Menſuration* of *Stone*, *Glaſs*, *Timber*, *Stackwood*, *Building* or *Architecture*, in *Height*, *Breadth*, *Length*, *Thickneſs*, *Angular*, *Circular* or *Square*. Here you may be inſtructed in the true *Menſuration* of *Lands*, *Diſtances* of *Places*; and have, to help you in *Travelling*, a Deſcription of the *Roads* of *England*, and their *Miles* with many other uſeful things; for the peruſal of which, I refer you to the following Pages; and conclude, That a Book more uſeful (of this kind) has not hitherto appeared in the World, which makes me hope (though it is fallen in an Age wherein the ſagacity of Mankind ſeems

to be at an ebb) that ſeeing it carries Profit in its front, and (in all likelihood) will Perform more than it Promiſes, it may find acceptance.

CHAP. I.

A Diſcourſe and Deſcription of the Growth and Manufacture of England, *in a view of the reſpective* Counties, Cities, *&c.*

AS *England* in it ſelf is very Fertil by nature, ſo has that fertility been wonderfully improved, eſpecially within the revolution of a few Ages, by Art and Induſtry, to a degree of its this day ſtanding in competition with the moſt fruitful Countries of *Europe*. Nor is it leſs in eſteem for its Manufactories, which for their goodneſs are known from and eſteemed above others by people of indifferent judgments, in the remoteſt parts of the World, whither ſhe ſends her ſtores to command the Riches of *Perſia*, *Egypt*, *Æthiopia*, and both the *India*'s; and indeed, the Growths and Manufactures of all the Earth's large Quarters or Diviſions, which makes her not without cauſe be termed *The Store-houſe of the Weſtern World*. And it is no leſs memorable, that when the *Romans* held it (as Conquerors) they received more wealth, by way of Tribute, from this Iſland, than from *France* and *Germany* (Countries then ſubject to that Empire) though ten times more large and populous. But not to dilate upon ſo copious a ſubject, that in the general diſplays it ſelf to mankind; I intend in this Chapter to touch only on the Growth, *&c.* of the reſpective Counties, that by a ſuperficial Remark the reſt may be more

more fully conceived or gueſſed at. And of theſe in their order.

Cornwal.

This County, thoughto ſtrangers, or at a diſtance it may ſeem Mountainous and Barren; yet in conſideration of the valuable things it afords, we muſt conclude it far otherwiſe; for in it are found rich *Mines of Tin*, and ſome *Gold* and *Silver*, tho' mixed with ſo much Droſs, that it will ſcarcely quit the coſt of Refining. There are likewiſe found *Triangular Stones*, tranſparent like Diamonds. And on this Coaſt is chiefly the *Pilchard* and *Herring Fiſh*, of which there are yearly computed to be taken four or five thouſand Hogſheads of *Pilchards*, nor fewer Barrels of *Herrings*, with ſtore of *Ray Fiſh* and *Congerdouſt*; it alſo abounds in *Cattle* and *Corn*. The Weight they uſe, is the long hundred, or 112 *l. Averdupois*; their Yard is equal to the Ell of *London*, that is a Yard and a quarter with us: Their Buſhel wherewith they uſually meaſure Grain and Salt, contains twenty eight Gallons heaped, yet their Strike Buſhel, frequently uſed in Markets, is accounted but twenty Gallons, according to *Wincheſter* Standard. The chiefeſt thing they ſtand in need of is Salt, by reaſon ſuch vaſt quantities are ſpent in ſalting their Fiſh; Ten thouſand Buſhels being computed the leaſt quantity that is ſpent on that occaſion in one Year; and in that Fiſhery Four hundred perſons are imployed.

Devonſhire.

This County abounds in rich *Paſture-Lands*, *Mines of Tin*, *pleaſant Rivers* ſtored with *Fiſh*; great ſtore of *Cattle*, and *pleaſant Fruits*; and is accomodated with moderately riſing *Hills*, and delightful *Valleys*, ſtore of *Parks* and *Warrens*.

Dorſetſhire,

Is very fertil producing great numbers of *Cattle* by its conſiſting of fat *Paſture-Land*, being well watered with pleaſant *Rivers*, *Brooks* and *Springs*: And here it is that the *Linen Manufactory* is carried on with much diligence and incouragement; employing a great number of perſons, *&c.*

Somerſetſhire,

Is full of rich *Paſture* and *Arable Land*; abounding in *Corn*, *Cattle*, *Wool*, *Woollen-Cloth* and *Serges*. In this County is the Famous City of *Briſtol*, which is the ſecond City of *England* for *Merchandiſe*, by reaſon of its commodious Port or Haven, for the reception of Shipping, *&c.*

Derbyſhire,

Is rich in *Lead-Mines* and other *Minerals*; abounds with *Corn*, *Cattle*, *Fiſh*, &c.

Wiltſhire,

Is a County of great *Manufactory* for *Woollen-Cloth*; which being made there, and ſold into divers parts, brings them great Returns, not only of Monies, but of divers Commodities.

Hampſhire,

Is a plenteous County in *Corn*, *Vines*, *Honey*, *Cattle*, and *Wool*; and is the more accomodated by being a Sea Coaſt County, having for its chief Port, the Famous Town of *Southampton*.

Barkſhire,

Is greatly in requeſt for the *Manufactory* of *Woollen-Cloth*, rich *Paſture-Lands*, curious *Gardens* and *Orchards*; *Cattle* in abundance, and what elſe may conduce to the ſupport of Life or temporal Felicity.

Surrey,

Is a County greatly abounding in *Paſtures* and *Arable Land*, producing great quantities of *Hay* and *Grain*; as likewiſe much *Cattle*; it is ſtored with *Fruits* of all ſorts, and many pleaſant *Rivers*,

Brooks

Brooks and *Springs*, that are the like with *Fiſh* and *Fowl*; containing likewiſe many Artizans who much add to and increaſe the *Manufactory* incident to all other Counties.

Glouceſterſhire,

Is taken up for the greateſt part in the *Woollen Manufactory*, as affording the beſt *Wool* for that uſe in the Nation; for in it are the Hills of *Cotswold*, on which Sheep (continually feeding) are ſaid to have their Wool as ſoft as Silk.

Eſſex and *Kent*,

Being parted only by the River of *Thames*, are much one and the ſame Soil, and abound in pleaſant *Woods*, *Gardens*, *Orchards*, *Cattle*, *Corn*, *Honey*, *Wax*, *Saffron*, and *Fiſh*.

Oxfordſhire,

Is noted for good *Paſture-Lands*, great ſtore of *Corn* and *Cattle*, abundance of *Fruit*, many pleaſant *Rivers*, good *Fiſhery*, and many *Manufactories*.

Buckingham and *Bedfordſhire*,

Lift up their heads amongſt the reſt, as being fruitful in *Corn*, *Cattle*, *Paſture-Lands*, *Parks*, *Warrens*, and in the improvement of ſundry *Manufactories*; abounding in *Foreſts* and *Rivers* ſtored with *Fiſh* and *Fowl*, *&c.*

Hertfordſhire and *Middleſex*,

Are rich in *Paſture* and *Arable Lands*, and as the Treaſury of the Nation, the latter incompaſſes the famous City of *London*, the very center of Trade and Commerce; to which not only the Trade of the Counties, but of all *Europe*, *&c.* flows; of which I ſhall ſpeak more hereafter.

Eſſex and *Cheſhire*,

Abound with *Paſtures*, producing great numbers of *Cattle*; as likewiſe with *Butter*, *Cheeſe*, *Corn*, *Fowl*, *Fiſh*, *Woollen* and *Linen Manufactories*.

Suffolk and *Norfolk*,

Abound in *Butter*, *Cheese*, *Cattle*, *Corn*, *Woollen-Cloths*, *Stuffs*, *Stocking-Manufacture*, *Deer*, *Coneys*, &c. and in the latter of these Counties is the City, of *Norwich*, ever famous for the *Stuffs* made there, as likewise the great number of *Stockings*, of which are yearly sent to *London* upwards of the value of a hundred thousand pounds worth. And with much the like Commodities I have named, and justly attributed to the forgoing Counties, the Counties or Shires of *Northampton*, *Cambridge*, *Huntington*, *Rutland*, *Leicester*, *Lincoln*, *Nottingham*, *Worcester*, *Warwick*, *Stafford*, *Salop*, *Hereford*, *York*, *Lancaster*, *Westmoreland*, *Cumberland*, *Northumberland*, the County of *Richmond* and *Bishoprick* of *Durham*, with the dependencies of the Town of *Berwick* upon *Tweed*, are stored.

To be short, the principal Commodities of this Island in general are, *Bays*, *Says*, *Serges*, *Cottons*, *Woollen-Cloths*, made in divers Counties, of sundry goodnesses and prizes, *Kersies*, *Buffins*, *Moccadoes*, *Sattins*, *Grograms*, *Velvets*, *Plushes*, *Callimancates*, *Worsted*, *Fustians*, *Durances*, *Perpetuanoes*, *Tukes*, *Furrs*, *Calve-Skins*, *Sheep-Skins*, *Hides*, *Paper*, *Arras*, *Cloth of wrought Gold*, *Tin*, *Iron*, *Lead*, *Sider*, *Beer*, *Ale*, *Oats*, *Barley*, *Wheat*, *Pease*, *Rye*, *Linen-Cloth*, *Fish*, *Cheese*, *Butter*, *Gun-Powder*, *Hops*, *Honey*, *Wax*, *Saltpeter*, *Yarn*, *Hemp*, *Flax*, *Saffron*, *Liquorice*, *Alum*, *Copperas*, and many things of the like nature; which (as I have said) command the Growth and Manufacture of all Trading Nations: So that this Island, that is very well capable of subsisting without the help of others (which few Countries can do) has hereby a double advantage. And thus having given the Reader a brief account of the Wares and Commodities, necessary and useful for the support of Mankind, and without the help (at least of some of them) no Trade can be

be managed; I ſhall now come nearer to other matters of moment.

CHAP. II.

Obſervations on the City of London, *and the Trade thereof*, &c. *in relation to the* Companies, *and their manner of dealing*, &c.

THE City of *London* (as I have ſaid) is the very center of the Nation, in which its Trade conſiſts Nor is its commodious ſituation the leaſt part of that reaſon, by having the benefit of Goods brought from ſo many parts by Water. It is accounted, together with its Liberties and Dependencies, about Eight Miles in Circuit; and within the Walls, Four and a half. Its Inhabitants are computed (though no certain account can be given) to be no leſs than 800000. of either Sex; and before the Fire it was adorned with 122 ſtately Churches; and its Traders are many and of ſundry Callings and Occupations; for the Companies that have been from Societies and Fraternities Incorporated, by ſundry Kings and Queens, and inveſted with Charters and Privileges are 64, *viz.* the firſt Twelve which are accounted the chief, and were firſt inveſted, bearing Arms and Banners, are the *Mercers*, *Grocers*, *Drapers*, *Fiſhmongers*, *Goldſmiths*, *Skinners*, *Merchant-Taylors*, *Haberdaſhers*, *Salters*, *Vintners*, *Ironmongers*, and *Clothworkers*; the other 52 being many of them very conſiderable in dealings, are the *Dyers*, *Brewers*, *Leather-ſellers*, *Pewterers*, *Barbers*, *Chirurgeons*, *Armorers*, *White-Bakers*, *Wax-Chandlers*, *Tallow-Chandlers*, *Cutlers*, *Girdlers*, *Butchers*, *Sadlers*,

lers, Carpenters, Cordwainers, Painters, Curriers, Masons, Plumbers, Imbroiderers, Founders, Inn-holders Poulterers, Cooks, Coopers, Bricklayers and *Tylers, Boyers, Fletchers, Black-ſmiths, Joiners, Plaſterers; Weavers, Fruiterers, Scriveners, Bottle-makers* and *Horners, Stationers, Marblers, Wool-packers, Farriers, Faviers, Lorimors* or *Lorinors, Brown-Bakers, Woodmongers, Upholſterers, Turners, Glaſiers, Clerks, Watermen, Apothecaries, Silk-Throaſters*, and *Fiſhermen*; And upon theſe the ſtreſs of Trade depends; who, by their Prudence and Induſtry, have brought to perfection thoſe Crafts and Occupations that inrich the Land, and afford us that Manufacture, for which (in a few ages paſt) we were obliged to be beholden to ſtrangers; which ſhews (whatever ſome have vainly pretended to the contrary) That the natives of this Kingdom are naturally of a prompt Genius: For certain it is, That they have (in moſt of their undertakings) out-done their Teachers; nor is it to be queſtioned (if materials were equally good) no Nation could boaſt of better Artificers. As for the Trade it's held and correſponded by ready Moneys, perſonal Credit, upon Reputation, Bills of Exchange, and the like, though it is a Cuſtom amongſt ſome Trades to deal by way of Exchange, giving one Commodity valuable for another of the like nature; and the uſual way of conſiderable Trade is by keeping Factors in the Country, or by holding correſpondence with thoſe that manage, or are the proprietors of Manufacture; or by keeping Fairs, Marts, *&c.* vending or buying there as opportunity or advantage offers. As for the Goods that are Imported from other Countries, the *Exchange* is the proper place of bargaining, and getting knowledge of what Commodities are brought in, and to be ſold; as alſo Intelligence of the Prices, and whether the Rate riſes or falls; and this

is

is continued on all days (*Sundays* and other great *Holy-days* excepted) between the hours of Eleven and Two; and hither reſort Traders of all Nations. As for the way of Dealing or Payment, it is either by drawing a Bill upon ſome credible perſon, or paying upon the delivery of the Merchandiſe, or by taking the Buyers word, at Three, Six, Nine, or Twelve Months; ſome indeed are ſo ſcrupulous that they will not make it a Book Debt, but will have a Bill under their Debters Hand, to be payed at a certain time mentioned therein: And thoſe that cannot ſpare time, or will not give themſelves the trouble to be there, have their Commodities bought for them by proxy, for which they allow the *Change*-Brokers (whoſe buſineſs it is, to be diligent on that occaſion) a ſmall Poundage. And now a-days, to prevent loſing Money, by having it taken away by the Knights of the Pad, it is uſually Returned by thoſe that deal much in the Country; ſo that a Man, without trouble, may pay his Money at *London*, and have it repayed him in any trading City, Borough, or Market-Town, where he pleaſes, by way of Bill. A fuller deſcription of which I ſhall ſet down when I come to ſpeak of Bills of Exchange, and other things of the like nature. Theſe and many the like are the ways of dealing, and managing Trade to the beſt Advantage and Improvement; with many more, of which I ſhall ſpeak hereafter.

CHAP.

CHAP. III.

A Deſcription of Engliſh *Weights and Meaſures, with their difference and diſtinction, and of Commodities Bought and Sold by them; as alſo the due Proportion of the Meaſure and Weight of* Engliſh *Cloth, (of divers Counties) as by Law eſtabliſh'd; with the knowledge of the Goodneſs, Value, Meaſure and manner of Sale of ſundry other Commodities.*

THE Weights in uſe are *Averdupois* and *Troy*. The former of theſe conſiſts of 16 Ounces to the Pound, and 112 Pounds to the Hundred; and by this *Fleſh*, *Butter*, *Cheeſe*, *Wax*, *Tallow*, *Soap*, *Salters* and *Grocers* Wares are weighed, and indeed moſt Goods of common ſale; and this is by ſome called *Garble*, by reaſon a Draught is allowed in every weighing, in conſideration of the waſte that may inſue, or has happened; and ſeven pounds of this weight are accounted to the Gallon of Wheat or other Grain, and fifty ſix pounds to the Buſhel. Seven pounds *Averdupois* are of *Troy* Weight one hundred and two ounces; from whence we gather, that ſeven pounds *Averdupois* is 102 *Troy* ounces, and of that weight the Buſhel of Wheat muſt weigh 112 pounds, and a quarter 448 pound; and ſo conſequently 14 pounds *Averdupois*, is 16 pounds 11 ounces *Troy*; and as one penny weight *Sterling* is the twentieth part of an ounce *Troy*, ſo ſeven Pounds twelve Shillings is 84 ounces, a half, and two penny weight *Troy*; and ſix Pound eight Shillings *ſterling*, is 82 ounces, three quarters, and a penny

penny weight; and from theſe two are the weight of White and Wheaten Bread calculated and ordered, as likewiſe Houſhould Bread, &c.

Cheeſe is ever weighed by *Averdupois*, and is accounted or ſold at 112 pounds to the hundred; and two hundred containing 224 pounds conſiſts of 34 Cloves, every Clove accounted 7 pounds. As for the weight it differs in Counties; as that of *Suffolk* conſiſts of but 256 pounds; yet that of *Eſſex* is accounted 336 pounds *Averdupois*.

A Sack of Wool has been accounted to weigh 354 pounds *Averdupois*, and two Weighs of Wool make a Sack, and two Sacks a Laſt. As for the Laſt of Herrings it is accounted ten thouſand, one thouſand to contain ten hundred at ſix ſcore to the hundred wet. Lead is diſpoſed of and ſold by the Fodder, each Fodder containing 1900 pound and a half, allowing 112 pounds to each, (*Averdupois*); and of this weight likewiſe, the pound conſiſting of 16 ounces, are made three ſeveral Quintars for weighing ſeveral ſorts of Goods and Merchandiſe. The firſt is bare five-ſcore pounds to the hundred, and is known by the name of the hundred little, by which valuable Commodities are ſold, as Drugs, Spices, &c. yet to them the ſeller allows the Buyer four pounds over-plus or vantage, to make good the waſte or decay; and this is derived from the weights of *Antwerp* for Spices, and called by the name of *Fet*. The ſecond Quintar conſiſts of 112 pounds to the hundred, called the Long hundred, and is uſed in the weight of Groſs Commodities: As for the third, it is allowed at 120 pounds to the hundred; yet this is uſed but for particular Commodities, as Tin to the King's Farmers, and ſome few others, and is known by the name of the *Stannary* or *Tin hundred*; and from this *Averdupois* weight, is that of the Stone, which is twofold,

tho

the one called the *Long Stone*, consisting of 14 pounds, and the other called the *Short* but of 8. There is another sort of weight called the *Todd*, yet variable, for in some places it is 7 pounds, some 8, and some 10, according to the Custom of the place where it is used. As for the weight called the *Clove*, it varies as to Place, some allowing it at 20 pounds, others at 28, and others again at 32. In many Markets, especially in the Country, *Stilliards* are of late much in use, for weighing Flesh, Cheese, and the like; but being for the most part not understood by the Buyer, much fraud accrues thereby; nor were they indeed designed for such uses, but rather to weigh Hay, Straw, and such cumbersom matters, as cannot conveniently be put into a Scale.

In brief, *Averdupois* consists of 16 ounces to the pound, each ounce of 8 drams, and every dram of 60 grains, and the Long hundred of this weight agrees in equality of weight, though different in number of pounds. In *Europe* with the weights of *Marsela*, *Venice Sotle*, *Venice Groß*, *Sicily*, *Lisbon*, *Florence*, *Lyons*, *Sevil*, *Dantzick*, *Bruges*, &c. In *Asia* and *Africa*, with the weights of *Alepo*, and *Tripoly*; in *Syria* with the weights of *Tripoly*; in *Barbary* with the weights of *Alexandria*, *Zera*, *Alexandria*, *Forfar*, *Constantinople*, *Scio*, *Rhodes*, *Acria*, *Babylon*, *Balsala*, *Ormus*, &c.

As for *Troy* weight it consists of 12 ounces to the pound; each ounce of twenty penny weight; each penny weight of 24 grains, and is commonly used (as I have hinted) in weighing of Gold, Silver, precious Stones, Powders, Electuaries and Physical Preparations. Of this seven pounds make the Gallon, consisting of 8 Pints, 2 Pottles, 4 Quarts; two Gallons make a Peck, four Pecks make the Bushel, and eight Bushel the Quarter. All wet Measures have their proportion by this weight,

twelve

twelve *Troy* ounces being a Pint of Liquids, eight pints or pounds a Gallon, either of Wine, Beer or Ale, according to the Standard of the *Exchequer* and Acts of Parliament, made in the Eleven and Twelfth Years of *Henry* the Seventh: and by this Rule Coopers do or ought to make their Caſks for all vendible Aſſize; *viz.* A Hogſhead to contain 63 Gallons, a Tierce 84, a Pipe 126, a Tun 252, a Barrel for Beer 36, for Ale 32: As likewiſe Caſks made for packing up Fiſh, *&c. viz.* a Herring Barrel to hold 32 Gallons, a Salmon Butt 84, an Eel Barrel 42, a Soap Barrel 32, and ſo as they are divided to be leſſened and reduced according as the neceſſity or occaſion requires it.

As for the Meaſures of Length, they are the Yard, conſiſting of three foot, each foot of twelve Inches, each inch of three Barly-corns; two inches and a half is a Nail, four inches a Hand, three hands a Span, four hands a Foot, two feet a Pace, three feet or ſixteen nails is a Yard, one yard and a quarter, or twenty Nails, is an Ell; and by theſe for the moſt part are Silks, Cloths, Stuffs, Ribbon, Linen, *&c.* meaſured. Again, Six feet make a Fathom, ten feet a Gad, or Geometrical Perch, ſixteen feet and a half is a Statute Pole or Perch, eighteen feet a Wood-land perch, uſed in Moors or Fens, four Statute Perches, or 100 Links make a Chain, 125 Geometrical Paces go to a Stade, eight ſtades or 1000 Geometrical Paces compoſe an *Italian* Mile, much in uſe at Sea, and 1760 Yards an *Engliſh* Mile at Land, eight Furlongs going to the Mile: But more of this when I come to ſpeak particularly of Menſuration.

In Canvas-Cloth 120 Ells are allowed to the hundred, of Fuſtian 14 Ells are accounted a Chief; but of Silk and the fineſt ſort of Linen only 10 Ells; and of Fiſh, as *Ling*, *Haberdine* and *Cod-fiſh*, 124 are accounted to the hundred; of Laths 5 foot long,

long, there are but fiveſcore to the hundred, but thoſe 4 foot long 120 to the hundred or bundle; as for the ſizable breadth it is an inch and ſometimes more; as for the thickneſs it ought to be half an inch.

Deal Boards are ſixſcore to the hundred, and the like of common Nails, as likewiſe of Tree Nails; there goes to a load of Timber (according to the way of reckoning them) 4000 of ſix inches in length, 3000 of nine inches, 2000 of 12, 1500 of 18, and 1000 of 24 inches or two foot; and theſe are generally in uſe for Shipping, being called or termed Ship-Pins.

Lime is ſold by the Bag in theſe Parts, which Bag ought to be a Buſhel, as formerly ſtated, and of theſe 25 are accounted to the hundred, though in places where it is made and is more plenty, it is diſpoſed of by the load, without the trouble of putting it up. As for Hoops, they are ſold or diſpoſed of by the bundle, according to their ſize or largeneſs; and of Hogſhead-Hoops a bundle contains 90, of Pipe-Hoops 70, of Barrel-Hoops 120. Thoſe for Kilderkins 120. Thoſe of Firkins 118, and ſo of other Casks, which for the moſt part are included within theſe Rules.

As for Skins, thoſe of the *Goat* are reckoned by the Kipp, and fifty of them go to that diſtinction, and of other Skins vendible by number, fiveſcore go to the hundred. As for *Furrs*, as *Minakens*, *Martins*, *Greys*, *Sables* and *Fennets*, they are ſold by the Timber, and of theſe 40 make a Timber.

Glaſs is diſpoſed of for the moſt part by the Seam, which is accounted 120 pounds, and Glaſs of *New-Caſtle* is reckoned by the Table, five foot every way being accounted that meaſure; 45 Tables make a Caſe, but of *Normandy* Glaſs 25 Tables make a Caſe; of Glaſs Bottles for Wine, &c. 21 are the Dozen, and 254 make a groſs, or twelve dozen.

dozen; and indeed twelve dozen of moſt Commodities are accounted a groſs. Paper, the Bale is generally forty Ream, each conſiſting of twenty Quires, and every Quire of twenty four Sheets; but of *Genoa* and ſome other ſorts each Quire contains twenty five Sheets. Of Hides, ten make a Dicker, twenty Dickers make a Laſt. Of Parchment, a Roll is five dozen of Skins; and of Gloves ten pair are accounted the Dicker; and now conſidering that the meaſure of Cloth or Wollen Manufacture is neceſſary to be known, I ſhall include it in this Chapter; as likewiſe the weight that ought to be allowed thereto; *viz.*

Kent, *Yorkſhire*, and *Reading*-Cloths are ſix quarters and a half broad, and ought to weigh 86 pounds; and in length, the piece to be 30 and 34 Yards. *Suffolk*, *Norfolk* and *Eſſex*-Cloths of ſeven quarters broad, ought to weigh 80 pounds, and to be in length 29 and 32 Yards. *Worceſter*, *Coventry* and *Hereford*-Cloths ought to be ſix quarters and a half wide, and in weight 78 pounds, the length 30 and 33 Yards. *Glouceſter*, *Oxon* and *Wiltſhire*-Cloths, as likewiſe thoſe of *Somerſetſhire*, ought to be ſeven quarters wide, and to weigh 76 pounds, and in length to be 29 and 32 Yards. *Suffolk* Sorting-Cloths of ſix quarters and a half wide, ought to be 64 pounds in weight, and in length 24 and 26 Yards; and all other Cloths that are ſix quarters and a half wide, ought to weigh 60 pounds the Cloth or piece, and to conſiſt of 24 or 26 Yards in length. Broad and narrow *Yorkſhire*-Cloths of four quarters wide, ought to weigh 30 pounds, and to be in length 34 and 35 Yards. That called the Broad Cloth of *Taunton*, *Dunſtable* and *Bridgwater* of ſeven quarters wide. ought to weigh 30 pounds, and in length to conſiſt of 12 and 13 yards. Kerſies of *Devonſhire* and *Douſons* of four quarters, ought to weigh 13 pounds,

pounds, and to be in length 12 and 13 yards. Checker'd Kerſies, Greys, ſtrip'd and plain of four quarters, ought to be in weight 24 pounds, and in length 17 and 18 yards. Ordinary Peniſtons or Forreſts of three quarters and a half, ought to weigh 28 pounds, and be in length 12 and 13 yards. Sortings, Peniſtons of ſix quarters and a half, ought to be 35 pounds in weight, and in length 13 and 14 yards. Waſhers of *Lancaſhire* and other Cloths of that County ought to be in weight 17 pounds, and in length 17 and 18 yards. And this was inſtituted for the prevention of Frauds, that they might have their due Subſtance, and not be made ſlightly and ſleiſey; and it is to be noted, That the Maker or Vender is obliged to allow it, if there be a defect in breadth, width or length; and if he refuſe it, he may be Sued and Damage recovered for a Fraud, contrary to the intent or true meaning of your Bargain: And that this may be perfected, there is a certain weight of Wool allowed for the performance. As a Sack of Wool does contain 364 pounds, the Tod in like manner is 38 pounds, of which thirteen are a counted the Sack, each Tod being four Nails, and every Nail ſeven pounds; ſo that from hence it is concluded, as indeed it is allowed, that a Sack of Wool is ſufficient, and ought to finiſh four Standart Cloths, to render them true breadth, true weight and true length; *viz.* ſix yards and a quarter wide, 60 pounds in weight, and 24 yards in length. And the next thing for the information of the Buyer is to ſee whether the Cloths he buys are well Mill'd and Dry'd, and that for ſhrinking or waſte he be allowed an inch in every yard: And thus having ſpoken of theſe things, to give an inſight more perfectly, perhaps, than many yet underſtand, I proceed to other things worthy of Note.

CHAP.

CHAP. IV.

A Deſcription of the Currant Coins proper to England, *and other Coins currant amongſt us, with their Intriſick value, and Rates at which they are legally paſſable,* &c. *With the Rates of Gold and Silver, and the manner of their Alloys.*

SInce Money is held to be the very Soul of Trade and Commerce, as it likewiſe is the Sinews of War, and the ſupport of national Affairs, I ſhall proceed to deſcribe that ſo deſirable *unum neceſſarium*, the which whoſoever is deſtitute of, is for the moſt part diſregarded and held in contempt, though he be endowed with never ſo many admirable Gifts of Body and Mind; *For*, as one obſerves, *Money is the worldling's God*: And with ſome is in ſo high eſteem, that it giveth Birth to Beauty, Honour, Credit, and in the Eyes, eſpecially of the Vulgar, makes the moſt Ignorant ſeemingly Wiſe: ſo that we may in ſome ſort conclude, That *omnia Pecuniæ obediunt*, All things are ſubject to Money; for indeed it is ſo admired, that Thouſands venture both Soul and Body upon a caſt to obtain it, though frequently they find the Wiſe man's Saying true, *viz. That it makes it ſelf Wings and flies away*, and that, many times, before they are ſcarce ſenſible they injoy it. But to my purpoſe.

Old Gold currant in England, &c. *if full weight.*

The piece of 22 *s. Sterling* is currant at 25 *s.* 6 *d.*

The 20 *s.* piece at 23 *s.* 6 *d.*

The 11 *s.* piece at 12 *s.* 6 *d.*

The piece of 10 *s.* or the Angel, currant at 11 *s.* 6 *d.* and ſometimes at 11 *s.* 9 *d.* Pieces

Pieces of 5 *s.* or a Crown in Gold current at 5 *s.* 9 *d.*

Pieces of 2 *s.* 9 *d.* the $\frac{1}{8}$ part of 22 *s.*

Pieces of 2 *s.* 6 *d.* the $\frac{1}{8}$ part of 20 *s.* pieces. There are likewiſe Roſe Nobles, and other pieces of old Gold, but being rather kept as Antiquities than currant, or in uſe, I ſhall wave them.

New Gold currant, &c.

Pieces of 5 *l.* miH'd Gold currant at 5 *l.* 7 *s.* and 6 *d.* containing the weight and value of four Guinnea-Pieces.

Pieces currant at 43 *s.* or double Guinneas, though accounted by Standard but at 40.

Guinnea-Pieces of 20 *s.* currant at 21 *s.* and 6 *d.* and ſometimes more, according to the ſcarcity, or, as you can purchaſe them to ſupply your Occaſions.

Pieces of 10 *s.* or half Guinneas, currant at 10 *s* 9 *d.*

Pieces of 5 *s.* or quarter Guinneas, currant at 5 *s.* 4 *d.* $\frac{1}{2}$

French Piſtole currant at 7 *s.* 4 *d.*

Silver old-Coin.

Pieces of 5 *s.* Pieces of 2 *s.* 6 *d.* Pieces of 13 *d.* half penny. Pieces of 12 *d.* Pieces of 9 *d.* Pieces of half Thirteen-pence-half-penny, yet put away ſingle currant, but at 6 *d.* Pieces of 6 *d.* Pieces of 4 *d.* half-penny. Pieces of 4 *d.* or Groats. Quarter pieces ſingle at 3 *d.* Pieces of 3 *d.* Pieces of 2 *d.* Pieces of 1 *d.* Pieces of a Half-penny.

New Silver Coin.

Pieces of 5 *s.* Pieces of 2 *s.* 6 *d.* Pieces of 1 *s.* Pieces of 6 *d.* Pieces of 4 *d.* Pieces of 3 *d.* Pieces of 2 *d.* Pieces of 1 *d.*

As for Copper and Tin Coins they conſiſt only in Half-pence and Farthings, two of the firſt or four of the latter going to a Penny, 24 or 48 to the Shilling. 12 *d.* make a Shilling, 2 *s.* 6 *d.*

the

the Half Crown. 5 *s.* or two Half Crowns make the Crown. 6 *s.* and 8 *d.* make a Noble. 10 *s.* an Angel. 13 *s.* and 4 *d.* a Mark. 20 *s.* a Pound. Again, 8 Half Crowns, 4 Crowns, 3 Nobles, or 2 Angels make the Pound or 20 *s.* and 3 Marks make 2 Pounds or 40 *s.*

Gold Eſtimated, &c.

One Penny weight of Angel Gold is worth 4 *s* 2 *d.* ½. One penny weight of Crown Gold is valued at 3 *s.* 1 *d.* ½. The like quantity of Sovereign Gold at 3 *s.* 6 *d.* ½.

The Standard for Sterling Engliſh *Money, is*,

11 Ounces, 2 Drams of fine Silver, and 18 Drams Alloy of Copper.

13 Ounces of fine Silver is worth 3 *l.* 4 *s.* 6 *d.*

1 Ounce without Alloy is worth 5 *s.* 4 *d.* ½.

12 Ounces with Alloy is eſtimated at 3 *l.*

The Standard for Gold is two Karects or Carots of Silver or Copper, to 22 Karects of fine Gold; and it is to be noted, That the Coined Gold of *Spain* is as fine as that of *England*, but the *French* and *Dutch* Embaſe theirs by more Alloy. Again, 1 pound *Troy* weight of fine Gold is worth 40 *l.* 18 *s.* 4 *d.* ¾ Of *Averdupois* it is worth 49 *l.* 13 *s.* 8 *d.* ¼ One pound of Silver *Troy* weight is worth 3 *l.* 3 *s.* of *Averdupois* weight 3 *l.* 15 *s.* 3 *d.* ½. And conſequently an hundred pound in Coined Gold weighs 1 pound, 11 ounces, 3 quarters weight. And in Silver 26 pound, 9 ounces *Averdupois*. As for the *Troy* weight by which Gold and Silver are weighed in *England*, it conſiſts, as I have ſaid, of 12 ounces, each ounce of 150 Karects or Carots, and thence into 480 grains. And although I have ſpoken of the value of Silver and Gold, meaning the fineſt, yet it may be reduced by alloy to cheaper Rates; *viz.* An ounce of fine Gold valued at 3 *l.* 33 Keys fine at 2 *l.* 17 *s.* 6 *d.* 22 Keys fine at 2 *l.* 15 *s.* 21 Keys fine at 2 *l.* 12 *s.* 6 *d.*

6 *d.* 20 Keys fine at 2 *l.* 10 *s.* And ſo leſſening by Alloy 2 *s.* 6 *d. per* ounce, as it wants a Carot fineneſs in 24.

As for knowing the goodneſs or fineneſs of Gold and Silver by aſſay, or upon the Touchſtone, to prevent being defrauded, obſerve to procure Needles of Gold and Silver, and Copper Alloy, ſuitable to the reſpective fineneſs, which muſt be four, *viz.* The firſt of fine Gold and Silver; the ſecond of Gold and Copper; the third of Gold, Silver and Copper; and the fourth of Silver and Copper; the firſt two for trying of the Gold, and the latter for trying of Silver, and of theſe mixtures make 24 Needles differing in fineneſs from each other, in this manner, The firſt of fine Gold not having any Alloy; *viz.* 24 Carots, the ſecond 23 Carots and 1 Alloy of Silver, the third 22 Carots of Gold and 2 Alloys of Silver; and ſo leſſen one Carot till there remains but one Carot of fine Gold in mixture with 33 Carots of Silver; and by the ſame Rule the Gold, and Silver, and Copper muſt be Alloyed, marking each Needle according to its fineneſs to prevent miſtakes; and by this method it is in your power to know the fineneſs of any Ingot or piece of Coined Gold or Silver to prevent taking, or being impoſed upon with Counterfeit Money: As thus, touch the piece of Gold or Silver upon your Touchſtone, and by it the Needle you ſuppoſe anſwers it in fineneſs or Alloy, and if it ſuit not, try another till you find there is an agreement, which being wetted will appear, when looking upon the mark of your Needle you may be certified of what fineneſs it is; or if it be Adulterated Metal of any other kind, if you rub it with Antimony, or touch it with *Aquafortis*, a ſuddain dulneſs and blackneſs will diſcover it.

CHAP.

CHAP. V.

Foreign Coins of divers Nations, valued in exchange for Engliſh *Monies, and* Engliſh *Money compar'd with Foreign Coins, with its true Eſtimate, and what they are worth by way of Purchace,* &c. *With the art of Knowing and Detecting falſe and counterfeit Monies,* &c.

SInce many Traders, eſpecially thoſe conſiderable, have frequently occaſion to take Foreign Pieces of Monies, although they have no Correſpondency in thoſe Countries, whoſe proper Coins they are, but rather take them at a value, I ſhall give ſome inſight into that Affair, how they go in Exchange or Pair for *Engliſh* Money, and afterward endeavour a further account how bad Money may be avoided; *viz.*

Placentia exchanges with *London* her Crown for 1 *s.* 6 *d.* ½. *Sterling.* The Crown of *Lions* at 2 *s.* 8 *d.* The Ducat of *Rome* at 87 *d.* ½. The Gold Crown of *Genoa* at 83 *d.* The Gold Crown of *Millain* at 84 *d.* ½ The Ducat of *Venice* at 60 *d.* The Crown of *Florence* at 80 *d.* The Ducat of *Lucca* at 67 *d.* The Ducat of *Naples* at 66 *d.* ½. The Ducat of *Lecky* at 60 *d.* The Ducat of *Bary* at 62 *d.* The Ducat of *Palermo* at 72 *d.* The Ducat of *Valentia* at 72 *d* ½. The Ducat of *Meſina* at 72 *d.* The Ducat of *Barſelona* at 72 *d.* The Ducat of *Surragoſſa* at 73 *d.* The Ducat of *Liſbon* at 69 *d.* The Ducat of *Sevil* at 72 *d.* The Ducat of *Bolonia* at 67 *d.* The Duccatoon of *Bergamo* at 67 *d.* The Florin of *Noremburg, Frankfort, Auguſta, Vienna, &c.* at 50 *d.* Sterling, *Antwerp, Cologne*

Cologne and *Amſterdam* at 34 *Flemiſh* Shillings and a half for 20 *s. Sterling* of *Engliſh* Monies.

Again, in the City of *London* and through *England*, the accounts are not kept in broken Numbers by Pence, as with Traders in moſt Foreign Places, but by Pounds, Shillings, &c. and ſets a value in exchange upon the Foreign Coins, at this rate *viz.* The Crown of *Placentia* 64 *d.* The Crown of *Lions* 66 *d.* The Ducat of *Rome* 65 *d.* The *Genoa* Crown of Gold 64 *d.* $\frac{2}{4}$. The *Millain* Crown of Gold 50 *d.* The Ducat in Banco of *Venice* 61 *d.* The *Florence* Crown 50 *d.* The Ducat of *Lechy* 51 *d.* The Ducat of *Bary* 57 *d.* $\frac{1}{2}$. The Ducat of *Palermo* 56 *d.* $\frac{1}{2}$. The Ducat of *Valentia* 59 *d.* The Ducat of *Surragoſſa* 64 *d.* The Ducat of *Barſelona* 59 *d.* $\frac{1}{2}$. The Florin of *Frankford* 52 *d.* The Duccatoon of *Bergamo* 53 *d.* $\frac{1}{3}$. The Duccatoon of *Bolonia* 53 *d.* $\frac{1}{2}$. And thus paſſes the current Exchange, and may be given for any of theſe Monies mentioned without fear of loſs or diſadvantage; but to make this more intelligible, I ſhall proceed to a nearer compariſon of ſeveral monies with the current Coin of *England*; *viz.*

Of *Spaniſh* Money, 6 Granadoes make a Mervid. 54 Mervids a Ryal, which is 6 *d. Engliſh.* 11 Ryals make a Ducat 8 Ryals 1 Piece of Eight, which is 4 *s. Engliſh.* 4 Quartiliards make likewiſe a Ryal, or 6 *d. Engliſh.*

Of the Money of *Portugal*, 40 Reys make a Ryal, or 6 *d. Engliſh*, 2 Ryals and a $\frac{1}{2}$ make a Feſtoon. 4 Feſtoons, or 10 Ryals a Ducat. 2 Ducats and a $\frac{1}{2}$ Mite of Gold.

Of *Holland* money, 8 Doits make a Stiver, 2 Stivers make a Doppalgen. 6 Stivers make a Shilling *Holland.* A Rixdoller is 50 Stivers, or 4 *s.* 6 *d. Engliſh.*

Of *Flemiſh* money, 8 *d.* is a Groat. 2 Groats a ſingle Stiver. 2 ſingle Stivers a double Stiver,

or

or 3*d*. 1*q*. *Engliſh*. 20 ſingle Stivers make 1 Guilder, or 3 *s*. 4 *d*. *Engliſh*. And 6 Guilders is one Pound.

Of *Scotch* money, 1 ſmall Piece makes 2 *d*. 1 *q*. *Engliſh*. 3 ſmall Pieces make a Noble *Scotch*, or 6 *d*. $\frac{1}{4}$. *Engliſh*. 2 Nobles Scotch make a Mark, or 13 *d*. $\frac{1}{2}$. *Engliſh*. 3 Nobles Stotch make one Pound *Scotch*, or 1 *s*. 8 *d*. *Engliſh*.

Of *Iriſh* money, 2 Obs or Four Pence half pennies make the Harper, or 9 *d*. *Engliſh*. And 20 Harpers make an *Iriſh* Pound, or 15. *s*. *Engliſh*. And of the like again, *viz*. of Gold, *&c*.

The *French Lewis* is worth 4 *s*. 4 *d*. The *Holland* Rider 1 *l*. 5 *s*. 9 *d*. The *Hungary* Ducat 9 *s*. 8 *d*. The *Spaniſh* Piſtole 17 *s*. 4 *d*. The *Flanders Albertus* 13 *s*. The Double Sower of *Flanders* 1 *l*. 8 *s*. 6 *d*. The *Italian* Piſtol 16 *s*. 7 *d*. The Guilder of *Porthono* 6 *s*. 10 *d*. The Guilder of *Mathias* the Emperor 7 *s*. 2 *d*. The Guilder of *Noremburg* 7 *s*. 1 *d*. The half Cardinal Angel 6 *s*. 4 *d*. The Ducken of *Venice* 9 *s*. 4 *d*. The *French* Piſtole 17 *s*. 4 *d*.

The value of Foreign Silver not yet deſcribed, viz.

The Rixdoller of the Empire 4 *s*. 5 *d*. $\frac{3}{4}$. The Mexican Real 4. *s* 4 *d* $\frac{1}{2}$. The Old Cordecus 1 *s*. 6 *d*. The *French Lewis* 4 *s*. 4 *d*. $\frac{1}{2}$. The double Milret of *Portugal* 3 *s*. 6 *d*. $\frac{1}{4}$. The ſingle Milret of *Portugal* 3 *s*. 9 *d*. The St. *Mark* of *Venice* 2 *s*. 6 *d*. The Croſs Doller 4 *s*. 2 *d*. $\frac{1}{2}$. The Old *Philip* Doller 5 *s*. The *Ferdinando* Doller dated 1623. 4 *s*. 3 *d*. The *Orange* Doller dated 1624, 4 *s*. 3 *d*. $\frac{3}{4}$. The *Leopold* Doller dated 1624. 4 *s*. 3 *d*. $\frac{1}{4}$. The *Rodulphus* Doller dated 1676, 4 *s*. 4 *d*. The *Maximilian* Doller dated 1616, 4 *s*. 5 *d*. The *Daniſh* Doller dated 1620, 2 *s*. 11 *d*. $\frac{1}{4}$. The *Portugal* Teſtoon 1 *s*. 2 *d*. $\frac{3}{4}$. The New quarter *French Lewis* 1 *s* 1 *d*. And thus much for the Pair and value of Coins, whereby every one may be informed as to their Intrinſick worth without the help or advice of a Goldſmith, or giving himſelf

the trouble of carrying Scales about him to weigh them; from which I proceed to diſcover the deceit in falſe and counterfeit Coins, &c.

Though many evil perſons for wicked Lucre and Gains ſake, have Coined and ſpread abroad great quantities of Imboſſed and Adulterated Money, made of Copper, Tin, and other mixed Metals, bearing the ſemblance of that which is good and paſſable, and by which many People are impoſed on; yet are there ways ſo to detect it, that the Promoters of it may be more and more diſcouraged, for which cauſe I ſhall inſtance ſeveral; and firſt paſſing by the clipp'd Money, which is indeed a great impairing and defraud, yet, of neceſſity, muſt be currant or paſſable, by reaſon the greater part of the old Money has more or leſs ſuffered in that kind; I come to ſpeak of the ſeveral counterfeit Coins moſt commonly met withal, *viz.*

Falſe Coins, though they are bad, differ ſomething from each other, ſome conſiſting a good part of them of Silver, others being only mixed and adulterated Metals with little or no Silver in them, and by Stamping, Waſhing and Boiling, or other Arts, for a long time will look ſo freſh, that they may in a manner deceive the Skilful. Some again there are, and thoſe commonly Half Crowns, that are Plated over, *viz.* a thin Plate with the Stamp imboſſed, cemented on a piece of Copper; and unleſs it be by the bellying or ſwelling in the middle of it, or the notice taken of the flat or hollow ſound it makes, may paſs currant a long time. Nor has the new Mill'd Money, though for a long time many would ſcarcely credit it, failed to be imitated or counterfeited, as has lately appeared by divers quantities that have been found finiſhed and unfiniſhed in the Poſſeſſion of the Offenders, and for which ſeveral have

ſuffered

ſuffered their deſerved Puniſhment, and is for the moſt part made of fine Tin and a ſmall mixture of Silver, by help of a Steel Stamp, &c. and at a bluſh very nearly repreſents the true. Nor have ſome been wanting by the compoſition of Spelter, ſome Gold, Copper, and other mixed Metals to counterfeit the Mill'd Gold, as Guinnea's, &c.

To diſtinguiſh theſe from lawful Coin, in caſe it be of the old Monies, if you have not the conveniency of trying it, as I have directed in the foregoing Chapter, it is convenient, that if you ſuſpect the piece of money to be Copper or Braſs, and yet it outwardly appears to be Silver, by reaſon of its not being ſufficiently worn to make any other diſcovery of that kind; let the party, if it be a Half Crown plated, ſtrike it with a violent force, or throw it with the edge againſt a Stone or any hard thing, and it will looſen the Silver plate from the Copper, and either make it riſe hollow, or break it in ſome part; or, if you have the opportunity, you may raſe it on the edge or flat with a Graver, and the Copper will appear; or, by dropping a drop of *Aqua fortis* or *Aqua regis* to eat through the thin ſhell; but the laſt of theſe is beſt done when it is only waſhed over; for ſo, when rubbed, a yelloviſh colour will appear; and if ſuddainly ſmell'd to, when hot, the Braſs or Copper will carry a perfect ſcent or Tincture on that Senſe. Counterfeit Shillings of the old Money are known by their extraordinary thickneſs, or on the other hand, thinneſs, their more than ordinary ſmoothneſs, their Leadiſh paleneſs or yelloviſh colour, the mackle or ſlur in the Stamp for haſte in Coining them, or the defect in the Letters, Effigies, or Arms: Thirteen pence half pennies, Nine pences, and Four pence half pennies have been very much of late Counterfeited in Copper, being only waſh-

ed or thinly Silver'd over, and are known by their dulneſs, the imperfection of their Stamps and Letters, which when new, caſt a pale white; but a little worn, a blackiſh kind of a ſhine, and if the edges of them are but a little rubbed upon a Flint, Touchſtone, or the like, the defect, by reaſon of the thinneſs of the Silver, will appear, and ſo of Six pences and Quarter pieces.

New Money is either Copper waſhed, or double gilded over, or a mixture of baſe Metal; the firſt of theſe are eaſily diſcovered; for though they at firſt ſeem very bright, yet they have a white ſhine more like gilding than ſolid Plate, if gilded; but if waſhed, it looks white and dull, and by ſcratching the Superficies with a Nail or the like to a very little depth, the Copper will appear, and many times the Superficies are wrinkled and pucker'd, and there is ſome omiſſion or defect in the Stamp, the Letters on the edges of Crown or Half Crown pieces being many times omitted, and inſtead of them only a haggle or roughneſs done with a File.

Thoſe that are made of a baſe mixture of Metal, though they are white throughout, by reaſon of a mixture of Tin, Antimony, and ſome Silver; yet are they for the moſt part rough and dull, wanting the Letters or ſome part of them on the edges or ſuperficies; and though they are many times as hard as Silver, yet being tryed with a Tool they are brittle and cut dull; their ſound likewiſe is flat, if thrown upon any hard thing; and being compared with Silver upon a Flint or Touchſtone, they make a white dull mark like white Lead or Pewter; though ſome there are that have ſo great a mixture of Silver in them, that if there be no defect in the Stamp they cannot well be diſcovered, but by Eſſay of Alloy with your Needles, the compariſon that way being the beſt

Rule,

Rule, unleſs you had the opportunity to make tryal by Fire, and of this bad money are found, Crowns, Half Crowns, Shillings, Groats, 3 *d.* 2 *d.* *&c.*

Guinneas have been found Counterfeited, ſome of very baſe Metals, but others to three thirds of the value, and the only way to try them if they are only ſhelled over, as very few of them are, is, by throwing them forcibly againſt any hard thing, or opening them with a Tool, or by Fire; for the Gold being thin, will, by the force of the heat, part from the other Metal without melting: Or you may detect this fraud by their weight or ring; or if they be double gilt the gilding may be raſed or ſcratched off, and the weight will be very defective. Some there are that have double gilt mill'd Shillings, and Ingrave the Scepters on them; but theſe are diſcovered as the former: But for thoſe that differ from the Standard by four, five or ſix Alloys or Keys, muſt be tryed by weight, needles or fire; and thus much for a caution to Dealers in money.

CHAP. VI.

A Diſcourſe of the value, goodneſs, weight, and manner of Sale of Pearls, Precious Stones; as Diamonds, Rubies, Sapphires, and other Jewels of high Eſteem in all Nations.

THE Pearls that are fiſhed for by divers in the Sea, and are found in the Shells of Oiſters, called Oriental or *Eaſt Indian* Pearls, are eſteemed according to their Beauty and large-

neſs, their water and gloſs, and diſtinguiſhed by Sieves bottomed with latten Wyre, and theſe Sieves are to the number of twelve, one leſſer than another; and according as the Pearls paſs through them which diſtinguiſh their bigneſs, ſo are they valued, but rarely bought, unleſs Seed Pearls, which are uſed in Phyſical Medicines, &c. e'er they be firſt holed for fear of breaking in that attempt; and the uſual rates ſet upon them are thus, A Pearl of 1 grain at 7 *d.* of 2 at 2 *s.* 6 *d.* of 3 at 5 *s.* 7 *d.* of 1 Carot at 10 *s.* and ſo proportionably thoſe of greater weight; but then they muſt be round and fair, of the firſt ſort of the ſmalleſt 4500 are accounted to the ounce; and of the largeſt of the beſt round Pearls, diſpoſed of by the ounce, each ounce contains about 400, and between theſe are 4 other ſorts: The leaſt of theſe are ſold at 15 *s.* the ounce; the leaſt next to them at 18 *s.* the next at 1 *l.* 6 *s.* the next at 1 *l.* 15 *s.* As for Rag Pearls, which want of roundneſs, and are yellowiſh or ſpotted, and are ſold by the ounce, they are three ſorts; an ounce of which containing 350 Pearls, is worth 1 *l.* 18 *s.* an ounce containing 250 is worth 3 *l.* an ounce containing 150 is worth 4 *l.* And ſo as they are leſſer in quantity or larger, ever obſerving, that all ſorts of half round Pearls of pure Water and Gloſs, are eſteemed worth a round Pearl of half the weight and goodneſs.

The Diamond of the beſt Water is valued thus; A Diamond weighing half a Carot, is worth ten Ducats; a Diamond weighing a Carot, is worth forty Ducats; a Diamond weighing two Carots, is worth 160 Ducats: So that a Diamond weighing but half a Carot, is worth but the fourth part of that weighing two, and ſo of the reſt: And if there happen to be over weight by grains, then muſt all be divided into grains, ſo that a

Diamond

Diamond weighing three grains, is worth but the fourth part of one that weighs six: And this is the general Rule not only for Diamonds but all manner of Precious Stones of equality in goodneſs. But to be more plain, a Table Diamond of the firſt goodneſs weighing a grain, is worth 1 *l.* 17 *s.* 6 *d.* that of two grains 7 *l.* 10 *s.* that of three 16 *l.* 17 *s.* 6 *d.* that of one Carot 30 *l.* And ſo of the reſt to eight Carots, which for the moſt part is the weight of the largeſt; yet theſe Rates are not attributed to thoſe that are imperfect, for thoſe which are called Brats, Naiſs, Rocks and Flat ſtones, are of little value.

The beſt Ruby is found in *Zeilim* in the *Eaſt-Indies*, which is that we call the Carbuncle, one of which being perfect and weighing a Carot, is valued at thirty *Spaniſh Ryals*, and ſo as the Diamond increaſes in value according to weight.

Another ſort there is called the Ruby of *Pegu*, found in a River of that Country, but of a leſs value. There are ſeveral ſorts of Rubies, as the Carbuncle, Balas, Spinal, Garnet, and Rubas. But the Ruby of *Pegu* is accounted next in goodneſs to that of *Zeilim*. A Table Ruby of a ſquare form, weighing twenty four Carots of the true colour, is ſo much eſteemed in the *Indies*, that it will yield there ſometimes 100 Ducats; and one of eleven Carots and a half in *England* has been ſold for 350 pound.

Sapphires are for the moſt part found in *Zeilim*. *Calecut*, *Canoner*, *Biſſinger* and *Pegu*; and a Sapphire weighing one Carot is worth two *Ryals* of *Spain*; one weighing two Carots, is worth five *Ryals*; one weighing three, is worth ten; one weighing four, is worth fifteen; and ſo of the reſt: And in this manner Jacynths, Amethyſts, Beryl, Topaz, Turquois, Chryſolites, and other Stones of value are eſtimated.

To know the true Diamond. If you ſuſpect it, the beſt way is, to try it by Fire; for if it be firm and not porous, it will reſiſt it for the ſpace of three or four hours, coming out as bright as at firſt; but if it be defective or falſe, the fire will ſoon have power over it and change its Luſtre; and if you would have a true one, obſerve it be of the right ſparkling black Water, neither bluiſh, yellowiſh, brown, or of a cloudy or muddy black, not having loſt or wanting any corner when mill'd; nor that it be too unſeemly thick or thin, whereby the ſetting or faſtning be hindred, or there be no need of boulſtering it up with black Velvet; and ſuch a Diamond of a Carot has been accounted, and is by many held at this day to be worth thirty five pounds *ſterling*.

The *Zeilim* Rubie or Carbuncle, is tryed by Fire; for being caſt into it, if it come out like a burning Coal, of a high colour, then it is held in eſteem above all others; for they are rather impaired by Fire, than augmented or increaſed in Luſtre, and are by the unadviſed ſpoiled in ſuch a tryal.

The beſt Sapphires are of a curious Azure or Sky colour, bright and clear; and, the Diamond excepted, excel all other Stones in hardneſs. As for other Jewels they are eſteemed for their weight and luſtre; for thoſe that are ſmall, flawed, clouded, or obſcure, are not much in eſteem.

Coral is of two ſorts, Red and White, and grows upon mineral Rocks in the Sea, being ſoft under-water, but coming into the Air it hardens into a Wax or Stone; of which the Red is the beſt, yet of no extraordinary value.

And ſeeing many are ignorant of the Weights by which Pearl and precious Stones are eſtimated, I ſhall deſcribe them.

The

The Weights for this purpoſe were firſt introduced amongſt the *Indians* by the *Portugals*, upon their finding out that large tract of Land. The chief called the Mangear or Fannan, not much differing from the Carot, 150 of which make an ounce Troy, and may be divided into 64, 32, 16, 8, 4, 2, 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$ parts, and the Mangear is much about 5 Grains, or 2 Tars $\frac{2}{3}$, reckoned the $\frac{2}{3}$ of a Carot, by which means 4 Grains and 4 Tars are equal in weight to the Fannan, which is ſomewhat above two of our Carots, for $11\frac{1}{4}$ Fannans are one Mittigal, and 6 Mittigals and a half make the *Troy* Ounce.

CHAP. VII.

A Relation of the Commodities of divers Kingdoms and Provinces, wherewith England, *and eſpecially* London, *is furniſhed, by the advantage of Navigation, to the great increaſe and improvement of Trade.*

SEeing there are ſome that drive conſiderable Trades, and yet are in a manner ignorant of what Country growth thoſe things are that they daily vend, I think it not amiſs to inform them; *viz.* *France* affords us *Wine*, *Prunes*, *Canvas*, *Paper*, *Linen*, *wrought Silks*, *raw Silks*, *Velvets*, *Stuffs*, *Boxes*, *Combs*, *Buckrams*, *Glaſs*, *Dying Grain*, *Roſin*, *Cork*, &c.

From *Spain* and *Portugal*, come *Wool*, *Madera Sugar*, *Wines*, *Oils*, *Anchoves*, *Aniſeed*, *Bay-berries*, *Bariglia Figgs*, *Raiſins*, *Trane Oil*, *Oranges*, *Lemons*, *Soap*, *Sumack*, *Saffron*, *Cork*, *Coriander Seeds*, *Liquorice*, *Woad*, &c.

From

From *Italy* and the Illands dependent, *Venice Gold, Velvets, Cyprus Silks, Satins, Cloth of Gold, Cottons, Fuſtians, Wines, Currans, Oil, Olives, Capers, Anchoves, Rice, Sarſenets, raw Silk, Almonds, Vitriol, Glaſs*, and curious *Toys*, &c.

From *Germany, Argol Steel, Latten, Wyre, Copperas, Alum, Fuſtian, Paper, Linen Cloth, Quick-Silver, Rheniſh Wines, Mather*, &c.

From *Denmark* and *Sweden, Maſts, Deal-boards, Rope, Yarn, Cordage, Tar, Roſin, Copper, Wax, Pipe-Staves, Wainſcot*, &c.

From *Ruſſia, Tallow, Hides, Wax, Honey, Cordage Rope, Yarn, Black Fox, Martins, Sables, Skins, Harts Tongues*, &c.

From the *Low-Countries, Cambrick, Lawn, Tape, Lace, Grograms, Linen, Chamlets, Mockadoes, Diaper, Hoops, Hops, Mather, Ling, Chimney-backs*, and ſome *Silks*.

From the Eaſt-land Trading, *Soap-Aſhes, Bow-ſtaves, Cables, Canvas, Buff, Hides, Flax, Hemp, Honey, Wax, Stock Fiſh, Spruce-Beer, Match, Cord, Wainſcot, Pitch, Tar, Roſin, Linen Cloth, Ropes*.

From *Barbary, Goats Skins, Almonds, Dates, Meals, Gum, Feathers, Salt-Peter, Gold*; and from the coaſt of *Guynny, Elephants Teeth, Grain* and *Wood* for dying, *Gold*, &c.

From *Ireland, Hides, Tallow, Hemp, Honey, Wax, Frizes, Pipe-ſtaves, Cattle, Yarn, Fells*, &c.

From ſundry parts of *Turkey, Balſam, Honey, Wax, Cottons, Wools, Galls, Aniſeeds, Cordevant, wrought Cottons, Grograms, Yarn, Ceuts, Carpets, Chamlets, Mohairs, Fruits, Drugs*, and much *Perſian Silk*.

From the *Weſt Indies, Gold, Silver, Sugar, Indico, Cochenele, Ginger, Pearls, Hides, Emeralds, Campeche, Logwood, Sarſaparilla, Cana fiſtula, Tobacco, Sugar, Cocus Wood, Lignum Vitæ, Cotton, Wools, Furrs, Skins*, rich *Dyes, Silver*, &c.

From

From *East India*, *Pearls*, *Diamonds*, *Emeralds*, and other precious Stones, *Cloves*, *Pepper*, *Silks*, *Cottons*, *Cocus*, *Callicoes*, *Drugs*, *Dyes*, *Indico*, *Salt-Peter*, *Silks* of *Persia*, *Cabinets* inlaid with Shells, *Silver* and *Gold* wrought, *Lacca*, *Mirabolans*, *Long-Pepper*, *Elephants Teeth*, *Oil of Zerseline*, *Benjamin*, *Saunders*, *Camphora*, and many other rich Commodities; all which, except upon some particular Prohibition, are brought in and vended, to the inriching of the Kingdom. But having thus far set down such Things and Matters as I thought necessary to be known, and that I might not break or disorder my method in proceeding, I now come to more weighty considerations, advantageous, if not absolutely, convenient for those that are desirous to Advance themselves by Trade, *&c.* and by the way, I shall set down the most easie Introduction into all the most useful parts of Arithmetick, after the best and most intelligible Rules and Order, which all Traders ought to understand and be conversant with, if they intend to manage their Affairs to the best Advantage.

CHAP. VIII.

Exact and easie Rules and Methods for the understanding and practising Arithmetick, with Tables and Examples altogether necessary and useful to be known and practised.

AS for Arithmetick so useful and so highly esteemed, it principally consists of five Parts, and those rightly understood are sufficient for any Trader to manage his Affairs by as he ought, *viz.*

Nume-

Numeration, *Addition,* *Subſtraction,* } { *Multiplication,* *Diviſion.*

And of theſe in their order, with fitting and ſuitable Examples, to render them eaſie to the weakeſt capacity.

The firſt of theſe, *viz. Numeration*, is the part of Arithmetick whereby any Figure, ſet down in its place, may be valued and expreſſed, which by the following Table will readily appear.

The NUMERATION TABLE.

Hundreds of Millions.	Tens of Millions.	Millions.	Hundreds of Thouſands.	Tens of Thouſands.	Thouſands.	Hundreds.	Tens.	Units.
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9

This

This Table you may obſerve has nine places, and in each of them the value of the figure expreſſed, by the direction at the upper end, as Unites, Tens, Hundreds, Thouſands, &c. By which rule, if you would number the firſt Line, conſiſting of ones, begin with the firſt figure on the left hand, over which you will find Hundreds of Millions, and the whole row to the right hand or laſt figure, will amount to One hundred and eleven millions: And ſo accordingly number the reſt, till you come to the bottom row of figures, which are the nines, and amount to Nine hundred ninety nine Millions, nine hundred ninety nine Thouſand, nine hundred ninety nine: And ſo in having recourſe to the upper directions, you cannot miſs the true value of any of the figures in the Table, which well underſtood and retained in the memory, will give the Learner much light to ſee into the other parts of Arithmetick.

Addition.

This is a part of Arithmetick, demonſtrating how to add or collect ſundry ſumms or numbers; and being ſo united, to expreſs their Total and true value in one ſumm; as put caſe the number 4667 and 2568; if you would collect or gather theſe two ſumms, begin at the two firſt Figures on the right hand, in this manner, *viz.* 8 and 7 is 15, then ſet down the 5 under the 8, and carry 1 to the next Figure, ever obſerving this rule, If your number be above ten you muſt carry one, and if twenty then you muſt carry two, if thirty then carry three, and ſo the like of every advance: Then proceed and ſay 1 and 6 is 7, 7 and 6 is 13, ſet down your 3 under the ſecond figure, and carry 1 to the next, and ſay 1 and 5 is 6, 6 and 6 is 12, then ſet down 2 and carry 1 to the next, ſaying 1 and 2 is 3, 3 and 4 is 7; then ſet down

4667	
2568	
7235	

7, and

7 and your ſumm falls right, and is finiſhed.

After this manner other ſumms of this nature are to be managed; as for example, if the number added does amount to ten, twenty, thirty, forty or fifty, or any other valuable number; you muſt ſet down in the place of the added number, and carry the figure of 1 for 10, and 2 for 20, and ſo of the reſt, after the ſame manner to the next figure. And ſo in greater values and expreſſion of figures in their due order and proportion, from which I proceed to give other demonſtrations in *Addition of Money*, which may render what has been ſaid more plain and eaſie to be underſtood.

897864
346123
521897
462178
2228062

Addition of Money, &c.

As for the value of currant Money, I ſuppoſe few are at a loſs to know it; however you may conſider four Farthings make a Penny, and twelve of thoſe Pence a Shilling, and twenty Shillings the Pound *ſterling*; now if it ſo happen that your ſumm conſiſts of Pounds, Shillings, Pence and Farthings, the laſt of theſe muſt firſt take place on the right hand, and there you muſt begin; and if it ſo fall out that any odd Farthings remain they muſt be placed under the Line of Farthings, as I ſhall preſently demonſtrate, carrying the Pence to the next Line; and ſo of the Pence, Shillings, &c. as for example.

l.	s.	d.	q.
6789321	4	10	03--2
432689	02	06	0
25689	05	00	0
206	10	09	1
68351799	03	06	6

l	s.	d.	d
6743	12	00	0
346	00	10	1
78	08	11	2
6	02	06	3
7174	04	04	2

And

And thus the Farthings ſet under the Line of Farthings, the Pence under Pence, Shillings under Shillings, and the Pounds under Pounds, the Accomptant cannot be miſtaken in the value of his figures by carrying the whole number, the leſs to the greater, as the Pence the Farthings make, to the place of Pence; the Shillings the Pence make, to the place of Shillings; and the Pounds the Shillings make, to the place of Pounds; and if no odd Shillings, Pence, or Farthings are left behind, then ſet down a Cypher o. And for the Proof of your ſumm, when you have caſt it up, draw a Line beneath the uppermoſt Line of it, and caſt up the other line with it, then Subſtract that ſumm from the Total ſumm caſt up before, and the remaining Figures will be the number you cut off, if it be true caſt up, elſe it will not.

Subſtraction.

Subſtraction, in Arithmetick, is a Deduction, or taking one number from another, the leſs from the greater, producing what remains; for example, put caſe you buy 786785 Pound weight of any Commodity, and have ſold out of that quantity 360604, to know how many pounds remain: Set down the greater number, and under it the leſſer that is to be Subſtracted from it; then draw a Line under that, as you ſee in the example, and take the firſt Figure towards your right hand in the lower line, and ſay, 4 from 5, which is found the oppoſite Figure, and there remains 1, none from 8 and there remains 8, 6 from 7 and there remains 1; ever taking notice to ſet the remaining number in the Line underneath; nought from 6 and there remains 6, 6 from 8 and there remains 2, 3 from 7 and there remains 4.

786785	
360604	
426181	

Again,

Again, if you would take 26896 from 34213 and be ſatisfied, as to what notwithſtanding remains, ſet down the ſumm, and take the lower number from that which is above it, beginning at the firſt Figure towards your right hand; 6 from 3 you cannot, but 6 from 13 and there remains 7; and obſerve always this Rule ever in *Subſtraction*, *viz.* for every 10 you want in the firſt place, you are to take it from the ſecond, as in this caſe you have borrowed 10 in the firſt, for 6 from 3 you cannot, but 6 from 13 and there remains 7; then carry that 1 to the next Figure, and 1 and 9 is 10, 10 from one I cannot, but 10 from 11 and there remains 1; and carry 1 to the next Figure and ſay 1 and 8 is 9, 9 from 2 I cannot, but 9 from 12 and there remains 3; and then ſetting your 3 according to the example and carry 1, and ſay 1 and 6 is 7, 7 from 4 I cannot, but 7 from 14 and there remains 7; then carry 1 and ſay, 1 and 2 is 3, 3 from 3 and there remains 0. And ſo the ſumm comes right, and is truly adjuſted.

	34213
	26896
	7317

Subſtraction of Money,

Is when the greateſt number, for which the *Subſtraction* is deſigned, takes place in the uppermoſt Line, and the number that is to be deduced or Subſtracted right underneath every Figure of the like kind, as Farthings under Farthings, Pence under Pence, Shillings under Shillings, and Pounds under Pounds; and in this manner put the caſe you ſhould borrow a ſumm of Money, equivalent to what is expreſſed in the upper Line of the following Example, and that you ſhould have repayed as much as the ſumm in the ſecond Line demonſtrates, and then if you would be ſatisfied in what remains due, Subſtract the lower number from the upper, and what

what in that caſe you find remaining, as *ſurplus*, is the ſumm due, &c. as by a further demonſtration will appear.

	l.	s.	d.	q.
Lent,	789786	—17	—11	—3
Paid,	692583	—19	—10	—1
The Remaind.	97202	—18	—01	—2
The Proof,	789786	—17	—11	—3

By which you ſee, that adding the ſubſtracted number and the number paid, they make up the firſt Line as appears by the Proof; but if they fail to do it, then is the ſumm falſe and not rightly ſubſtracted or caſt up; ſome further Examples of the like nature take as followeth:

	l.	s.	d.
Lent,	67812345607	—01	—00
Repay'd at ſundry times.	21261642191	—01	—00
	6897621	—03	—01
	346026	—00	—03
	21268885838	—04	—04
The Remaind.	46543459769	—06	—02

The manner of proving or trying this ſumm is to add the three ſeveral Payments under the firſt Line together, and ſubſtract that Line which is added underneath them from the top Line, and place the Remainder underneath the next Line, as in the Example, and to prove whether it is right or not, is by adding or putting together the two lowermoſt Lines, and if they prove equal with the original ſumm Lent, then is it rightly ſubſtracted; but if it be not equal, the ſumm is falſely

falsely cast up: And so of any other summ greater or lesser of the like kind.

Multiplication.

In this case our business is to Multiply one Number by another, to the end that a right understanding may be had, and the product known; and in it there are three parts, *viz.* the Figures to be multiplied, the Multiplier, and the Product. As thus, the Multiplicand, or Figures given to be multiplied, is no more than the Number given. The Multiplier, the Number by which we must Multiply, and the Product that which is produced by Multiplication. As for Example, if any one undertakes to Multiply 6 by 4, then the production or product will be 24, for 4 times 6 amounts to 24. And further, it consists, in a manner, of two parts, *duplex & simplex*, compound or double, and simple or single. That which is called single is when the Number given to be multiplied, consists but of one Figure; but that which is double, of many Figures: Yet for the easier demonstration, I have thought it altogether necessary to affix a Table as the plainer direction.

The Table of Multiplication.

1	1	2	3	4	5	6	7	8	9
	2	4	6	8	10	12	14	16	18
		3	9	12	15	18	21	24	27
			4	16	20	24	28	32	36
				5	25	30	35	40	45
					6	36	42	48	54
						7	49	56	63
							8	64	72
								9	81

To

To give a greater light into this way and method, I think it convenient to begin with the single Number or Figure, as to what relates to further Example.

Example.

Multiplicand	68961324
Multipier	2
The Product	137922648

The second, when Multiplied in two Figures, &c.

Second Example.	
689602	
67	
4827214	
4137612	
46203334	

Third Example 3 Figures.	
87968	
987	
7615767	
03744	
791712	
86824416	

And thus you may increase the Summ, or number of Figures as the cause or purport of your Affairs require, &c. From which I shall proceed to Division.

Division.

This is no more than distributing a greater Summ by the Units of the lesser, or dividing a third Number in respect of two propounded Numbers, which third number frequently contains as any munits as the greater of the two propounded numbers contains a lesser: It likewise brings many parcels, or parts divided into few, though being put together they equal the former in value; for by the Rule of Division pence are turned into shillings, and they again into pounds; the which I shall more plainly demonstrate by Example, *viz.*

120

120 ſhillings make 6 pounds, and by that means ſix ſcore ſhillings are turned into 6 pounds, which appears (though it ſtand in competition) to be a ſmall number; yet the denominators conſidered, you will find they are ſuch, that the latter is equal with the firſt; and conſequently in value the Summs are one, though they differ in the number.

As for the latter Summ, the leſſer always in the diviſion, though in the working the ſumm is parted by another; and ſo it falls out, that in Diviſion Three Numbers are required; as firſt the Dividend, which is the greater Summ to be divided; Secondly, the Diviſor, which is frequently the leſſer, and by which the other number is to be divided; as for the Third, it is the Anſwer to the Queſtion, How many times, &c.? and is held or accounted the Quotient.

To know this Rule exactly, firſt place your Dividend, then your Diviſor juſt under the firſt figure towards your Left-hand, altogether contrary to the working of *Multiplication*, nor will an example of this kind be amiſs, *viz.* If you happen to divide 365, (the number of the days of the year) by 28, (the like with the days of a vulgar Month) place them as you ſee them placed for your Inſtruction in the Margent.

	365
	28

Again, if you intend to divide the 365 days by the weeks of the year, as they are in their exactneſs ac ounted, then the Figures muſt be placed thus;

	365
	52

If you would divide them by the four diſtinct ſpaces or Quarters, then thus;

	365
	4

But nearer to the purpoſe, obſerve in this caſe the probation of this ſumm.

	365 (1
	28

In

In the firſt place ſeek how many times you can have the Figure 2 (which is the firſt Figure of the Diviſor) in 3 (which the firſt of the number to be divided) and the crooked Line at the end ſhows that 2 can be but once taken out of 3; wherefore the Figure 1 is placed in the Semi-circle, called the Quotient; and in this caſe once 2 is 2, 2 from 3 and there remains 1, which is placed over the 3, and then the 2 is croſſed as likewiſe the 3; and ſo proceed to the next Figure, and there conſider, 8 out of 16, which are the Figures over head, and there remains 8, which is placed over head, and croſs the 8 beneath the 1 and the 6; and when you have thus wrought 1, then you muſt begin again and make the Deviſor anew, as in the Example appears: Set 2 under 8, and again 8 under 5, as you ſee; then inquire how many times you may have 2 in the Figure over head which is 8, four times two you reaſonably cannot, becauſe there is no conveniency of doing it; therefore you muſt ſay you may conveniently have it three times, and ſet your 3 in the Quotient, ſaying three times two is ſix; then place your 2 over the 8 and croſs your other Figures; then proceed to the next Figure which is 8, allowing three times eight to be 24, 24 from 25 and there remains 1, and ſo ſet the 1 over the 5, croſſing the 5 and 2, and your work is done.

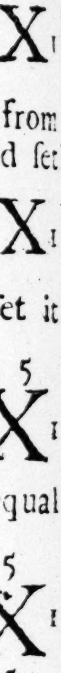
18
365 (1
28

2
181
365 (13
288
2

Now that you may be ſatisfied further, when you have divided your ſumm right, in the firſt place caſt away nine as often as poſſible out of the Diviſor and that which remains, and then ſet it on one ſide of the Croſs or X; as in your Example, before the Diviſor was 28, from which

three

three times nine may be taken, and 1 only remains, set that one as you may observe on the Right-hand, and examine the Quotient, which in the example is 13, and from thence cast away 9 as often as you can, and set the Remainder on the other side of the Cross oppositе to the former, as is directed; then Multiply 4 by 1, and it will allow but 4, yet adding to it the 1 it is 5, set it over the Cross as it is marked, then examine the Total Summ divided, and as often as may be take away the nines; and that which then remaineth set on the foot under the Cross, and if it prove equal with that above then is it right, as by the example is demonstrated; so that the whole Summ 365 maketh 14, from that take 9 and 5 is the remainder, set then the 5 at the foot and it is right.



These parts of Arithmetick being well observed and improved, will inable the Trader to keep his Accounts in good order, which if he neglects to do his Business or Affairs cannot reasonably be expected to be over prosperous: and for a further light into the way of stating Accounts, to prevent mistake, I proceed to give directions in the succeeding Chapter.

CHAP.

CHAP. IX.

Directions in the management of Accounts and keeping Books after the moſt exact manner, in placing of Goods and Parcels, &c. to avoid miſtake, and create a right underſtanding.

WHen in way of Trade, &c. you make a Receipt of Monies, you muſt obſerve to make the Caſh Debtor upon the Account, and the perſon of whom you received it muſt be nominated or mentioned Creditor.

If you make a Payment of Monies, the perſon to whom you pay it, muſt be accounted the Debtor, and the Account of Caſh Creditor.

When any Goods are bought at ready Money, the account of the goods muſt be made Debtor, and the Caſh Creditor.

When Goods are ſold for ready Money, then muſt the account of caſh be made Debtor, and the goods ſo ſold, the Creditor.

When Goods are bought, and time given for the Payment, make the account of goods Debtor, and the Perſon of whom they are bought, Creditor.

When you ſell Goods at time, make the account of the Perſon Debtor, and the goods Creditor.

When Goods are bought part at time, part ready Money, they muſt be divided into two parts, and the goods conſequently being made Debtor for the whole ſumm, and for that part for which time is given, the perſon of whom they are bought muſt be made Creditor, but for the ready Money you muſt make the Buyer, Debtor, and the Caſh, Creditor.

When Goods are ſold part at time, and part ready money, you muſt make the perſon Debtor for the Total, and afterwards the goods Creditor: Then you muſt make the Caſh Debtor for ſo much as is received in money, and for the reſt make the Buyer Creditor.

If Goods are ſold by way of Barter, goods for goods of equal value, you muſt ſet down the goods that you receive Debtor to thoſe you deliver in Lieu of them.

When Goods are bought at time, and yet the Money paid down or paid before the time is expired with Rebating or Diſcount, then you muſt make the Perſon Debtor, *viz.* to the Caſh; for ſo much as you pay him before it becomes due, and to profit and loſs for the allowance or Rebatement upon Diſcount; and ſince this way's often uſed and much practiſed amongſt Dealers, I ſhall before I proceed to deſcribe the ſeveral Books that ought to be carefully kept, in the further ſtating, managing and adjuſting Accounts, *&c.* ſpeak ſomething of the way and method of Diſcount, not only what it is, but how underſtood and managed, as the time or occaſion requires.

CHAP. X.

Diſcount, what it is, and how to be obſerved in the Rules of Trade, &c.

THis Cuſtom amongſt Dealers has of late been very much in requeſt; the manner thus, Suppoſe you have ſold a parcel of Goods to a conſiderable value at time, to be paid at the end

end of three, ſix or twelve Months, and after the contract is made, he that buys having no mind to keep his Money by him ſo long, comes and offers preſent payment, if he may be allowed the Diſcount or Intereſt for the time, or till the time it ſhould be paid, at the rate of ſix or eight *per Cent. per annum*, now it is in your choice whether you will accept it or not till it really becomes due, though divers, to ſupply their urgent occaſions, embrace the opportunity; and although ſome are exacting, ſuiting their demands to the neceſſity of thoſe they have to deal withal, yet in the general it is not ſo; for put caſe Goods (value 200 pounds) are ſold at ſix Months, and preſent payment notwithſtanding is made at ſix *per Cent.* upon Diſcount; to know what muſt be allowed, reduce the whole ſumm into Pence, and the product will be 48000, then Multiply thoſe Pence by ſix, the number of the Months to be diſcounted for, and the Product will be 288000, which you then muſt divide by 200, and the quantity of time which is to be allowed, and being united they make 206 for your Diviſor, the Quotient will be 1398 $\frac{6}{103}$ Pence, which reduced into Shillings, is 116 *s.* 6 *d.* $\frac{6}{103}$ parts of a Penny, this reduced into Pounds makes 5 *l.* 16 *s.* 6 *d.* $\frac{6}{103}$, and ſo much upon Diſcount muſt be abated out of the 200 Pounds for the time mentioned, according to the true method of ſuch rebate, and this is given for a reaſon, *viz.* becauſe if you allow 6 Pound, then is it the full Intereſt for 200 Pounds, but you do not receive 200 Pounds, for as much as the ſumm diſcounted is taken out of it, for which there is no Intereſt or Rebate to be allowed, and thus you may proceed to the management of greater or leſſer ſumms on this occaſion.

CHAP. XI.

The Accomptants further Directions what ought to be obſerved in keeping Accounts, and placing them in order, &c. *and what is to be obſerved in the Payment of Monies,* &c.

AS for thoſe that would be exact in keeping their Accounts, without being ſubject to miſtake, or injuring themſelves or others, they muſt have their ſeveral and ſeparate Books, and more eſpecially a waſte Book, a fair Journal, and a Ledger, which muſt be ruled and prepared fit for the placing and ſetting down in order thoſe things for which they are deſigned, and ſuch you may purchaſe without giving your ſelf the trouble to make or Rule them.

As for the waſte Book, it muſt be that in which every thing appertaining to Trade or Buſineſs muſt be daily ſet down, and from thence removed into the Journal by a fairer writing or more exact placing, ſo that they may be eaſily found upon any occaſion; and it is properly called an Inventory, becauſe it contains, or ought ſo to do, all Monies owing to you, all Accompts wherein you are concerned, and other more particular Affairs, not omiting the Debts and Monies you owe to others; as ſuppoſe you have 40 *l.* 6 *s.* 8 *d.* in ready Money, 110 *l.* 6 *d.* 4 *d.* in one Commodity, and 119 *l.* 6 *s.* 3 *d.* in another, 16 *l.* 10 *s.* 4 *d.* due from a perſon at *Worceſter*, 119 *l.* 2 *s.* 11 *d.* from one at *Canterbury*, 100 *l.* 0 *s.* 0 *d.* by another at *London*, in this caſe you muſt obſerve to place Debtor and Creditor as I have before directed;

directed; but if you lend Money out at Intereſt, then muſt you make the Borrower Debtor for the principal and Intereſt, and Caſh Creditor for the principal Money only, and your ſelf Creditor for the Profit or Intereſt, but if you receive Money for Inſurance, then Caſh muſt be indebted, and you muſt credit Profit and Loſs, foraſmuch as it is money clearly gained or gotten.

If you pay money upon Goods that go into Parts beyond the Sea, you muſt make the Voyage to the place it is deſigned, Debtor, in the hands of the perſon to whom they are ſent, or with whom they are intruſted, though for your own uſe, becauſe it is not perhaps in your power to recover them again, but in ſpecie; and for the Charges you are at upon that Account, you muſt make the Goods Debtor; but if you ſend the Goods on the behalf of another Man, then they muſt not be charged as Debtor, but the perſon himſelf for whom they are ſent muſt be charged Debtor for the ſumm they amount to, and Caſh for the Charges.

In caſe of money received for any Legacy you muſt make your Caſh Debtor; as having received it, and credit Profit and Loſs, becauſe ſo much Profit accrues thereby.

If ſo it happens, That you have a Bill of Exchange, *&c.* remitted you at any time at double Uſance, or ſingle Uſance only, you muſt make debt Bills of Exchange remitted, there being an account ſo called, and credit the perſon for the money he did remit, becauſe the Remittor muſt be made Creditor; nor is it leſs than an Error in thoſe that will ſay, the Remittor is not to be Creditor, until the money be received; for the Remittor muſt have credit ſo ſoon as the Bill is accepted; but the Caſh cannot be made debtor, by reaſon no money is received into it until Two

months after. But when the Bill is received, then you muſt make your Caſh the debtor, and credit the Accompt of Bills of Exchange remitted, for that it hath diſcharged the truſt: But if the Bill of Exchange be remitted to be paid at ſight, and the money accordingly received, then is the Caſh debtor, and the Remittor the Creditor.

If you have a Bill of Exchange drawn upon your ſelf at time, then debt the man, and credit the account of Bills drawn, as you likewiſe did the account of Bills remitted, by reaſon you muſt debt the Man, and cannot credit the Caſh, for-aſmuch as you do not pay it, but you may credit Bills drawn, and when that Bill becomes due, debt Bills drawn, and credit Caſh for the money. But if the Bill be drawn upon you at ſight, then is the Caſh, if the money be paid, Creditor, and the man Debtor.

If ſo it fall out, That you have ſold Goods to another Shop-keeper, and they being damaged he requires Abatement. If they are already ſet down, you muſt debt Profit and Loſs, and credit the perſon who is to be allowed. But if you are to have the allowance your ſelf upon the like occaſion, you muſt make the man Debtor, and the account of Goods bought Creditor.

If you buy Goods for your own uſe and behoof, then muſt you frame an account, placing the goods as Debtor, and the party you bought them of as Creditor, notifying their Weight, Length, Number and Price, with the time they were bought at.

If ſo it happen, That you buy goods in one day of divers perſons, as two or three, and they be bought to your own uſe and behoof, and time is given, then muſt the goods be Debtor to ſundry Accounts, and thoſe Accounts muſt be the men you bought them of, by which means you will

will avoid making the ſeveral Parcels in the Journal.

But if you buy of more than one Perſon with ready money, then the goods are Debtor, and the Caſh Creditor, and ſo goods againſt goods muſt be ſtated by way of Barter, as I have already mentioned.

If a Friend ſhould ſend you any Goods to diſpoſe of for him, and ſuppoſe you ſell them for goods in Barter, Money, time, and a Note of any Man's Hand; or if the like be done for your ſelf, the Buyer muſt be made Debtor, and the goods (naming of whoſe Account they are) muſt be the Creditor. And again, ſuppoſe you have ſold One hundred Pounds in value of goods upon your own Account, and inſtead of paying you at two months he ſhould go off and give you a fourth part down, a fourth on Security, a fourth at time, and a fourth part to be loſt, you muſt ſet it down in your waſte Book, *viz.* Sundry Accounts Debtor, and make the Man that Breaks Creditor, for the whole ſumm of One hundred Pounds, and the Accounts that muſt be Debtor are, *viz.*

	l.	*s.*	*d.*
Caſh for a fourth down ———	25	— 00	— 00
L. C. his Friends Bond, at 6 mon. —	25	— 00	— 00
R. G. himſelf, at 3 mon. ———	25	— 00	— 00
Profit and Loſs by him ———	25	— 00	— 00
Total	100	— 00	— 00

And ſo you enter it all in one Parcel, and by that means prevent much trouble; but if it ſo fall out in caſe of a Friends Goods, with which you are intruſted for Sale, you muſt debt that Account currant, inſtead of Profit or Loſs, and with what ſpeed you can give him advice.

These are material things to be considered in keeping Books of Accounts as they ought, *viz.* free from Errors and Injuries on all parts; yet these are not all but further matters are required, as in the next Chapter will appear.

CHAP. XII.

Of Debtor and Creditor, Enteries and Posting, and many other curious matters to be observed in keeping and casting up Accounts, &c.

BY reason the exact keeping of Books, which is one of the hindges upon which Trade turns and Commerce is held, consists of such variety, I shall summ 'em up as brief as may be in the most material parts, by which the rest may easily be comprehended, and those are centered in general Rules to be observed in entering every Parcel, the right minding of which will not suffer you to be out or mistaken. As thus.

Every Parcel consists and is compriz'd of Four different things, though in the main they cohere, *viz.* first the debt, secondly the Creditor, thirdly the summ, fourthly the reason of it, or upon what Account it is; as for Example, you have paid One hundred Pound, for or upon the Account of *William West* of *York*, and in your Journal you find it thus written:

Lond:

Lond. Novemb. 2. 1687.

William West of *York* Debtor to Cash 100 *l.* for so much paid for him to *James Tellwell* of *Norwich*, by his order, the 24*th.* of *October*, the date of the Year above-mentioned.

	l.	*s.*	*d.*
Is ———	100	00	00

And here you may for your better satisfaction observe, That, first, *W.W.* is the Debtor, secondly, Cash is the Creditor, thirdly, the summ 100 *l.* fourthly, the reason of the Parcel, *viz.* for Money paid to *J. T.* of *Norwich*, by his order of the 24*th.* of *October*, 1687.

If you carry this in your mind you will find an admirable Advantage and Facility in it; for if at any time you are entering a Parcel, and it does not presently occur to your memory, this will help you.

The next weighty matter of this kind to be considered, is the posting out of the fair Journal into the Ledger, which Ledger is or ought to be a large Book, held and indeed should be the Judge of the other; for in it you may presently see what you owe, or what any one owes you, &c. or what Goods you have by you unsold, without any trouble of turning or tumbling them over: Nay, what you have in any Factor's or Trustees hand, and how it stands with you in relation to loss or profit, from the day you first Traded. And since this Book is so exceeding useful and necessary, I think it as necessary to demonstrate it: As thus,

The Ledger ought to consist of seven Columns, first the Column for the Month, to contain only the name of the month, in the second Column you must put down the day of the month in Figures;

in the third Column place the matter of the Parcel, be it of the credit ſide or debt ſide of the parcel; in the fourth Column place the Figure of the Account you poſt unto, and if you turn that Figure you will find out where that Account ſtands and the particulars; the fifth Column is the Pounds, the ſixth Column the Shillings, and the ſeventh the Pence: As in Example.

The Form of the Ledger, &c.

No 1	No 2	No 3	No 4	No 5	No 6	No 7

And as you ſee theſe Columns numbred *viz.* 1, 2, 3, 4, 5, 6, 7. ſo you muſt ſet down as is above derected, and there can be no miſtake, if you do not miſtake in the number of the Figures you ſet down, nor in the value of the Parcel, &c. which you cannot well do if you are any ways cautious or careful therein, minding to ſet the Parcel in the manner and form, as in the Example of that kind, which I have before laid down. And as for the

the posting speedily to find out any Account you must observe this method; *viz.* look at the beginning of your Ledger for your Alphabet, and by it you may know in what Page of the Book the Persons Account stands that you look for, and put case it stands placed in Folio 17, turn to that place and there proceed in this manner; as in case the Account of *William West* be to be posted, in the first Column put down *October*; in the second Column put down 2, being the Day of the Month; in the third Column put down the Party to whom he is debted, to Cash, with as much as you can of the reason of the Parcel, always observing in the Ledger to make it but one Line; and in the fourth Column place the Folio where Cash stands, and that is the 19, and then set down the summ, *viz.* 100 *l.* and the Parcel is posted; and when in this manner it is posted return to your Journal, and there at the beginning of it you'll find a stroke in this manner —— where *William West*'s Account stands, which is Folio 17, and then that stroke will stand thus $\frac{17}{}$. This being done you must go to the credit of the Parcel, thus turn to Folio 19, that is Cash, and there you must name in the first Column *October*, in the second 2, in the third Column by *William West*; in the fourth mark the Folio where *William West*'s Account does stand, and then the summ, which is 100 *l.* and so you return to the Journal, and there you find the posting Line to stand in this manner $\frac{17}{}$, and under this you must place the Folio of Cash number 19, and then it will appear to be $\frac{17}{19}$, and then your Parcel is rightly done as to the Debtor and Creditor, and wherever you find a Parcel that hath but one side of the posting Line supplied with Figures, then is there one part of it left unposted: but to render it yet more plain, I shall say something more particularly of the Alphabet.

The

The Alphabet is no more than a Book of twenty four Leaves, left at the beginning of the Ledger, and on them are placed the 24 Letters, one Letter to a Leaf; and if you look for any Account take the Sirname, and obſerve under what Letter it is, and in caſe it be any of theſe or the like, *viz.*

Andrew Allman
Thomas Bennet
James Cadwell
Arthur Dalmelo, &c

Say *Allman Andrew*, *Bennet Thomas*, *Cadwell James*, *Dalmelo Arthur*, and ſo of the reſt, ſo that the names being Alphabetically in order under the Letters, ſet Folio 1 to the firſt, Folio 2 to the ſecond; and in like manner proceed.

This being done, when you have any occaſion to proceed in the ſearch of a name, it is but looking under the Letter that begins the Sirname, and it will direct you to it, and that directs you to the Account belonging to it.

There is yet another thing to be conſidered, which I purpoſe not to omit, and that is the pricking of a pair of Books, and the rather, becauſe ſome when they here it ſpoken of are Ignorant of the meaning on't.

The pricking of a pair of Books is no other than comparing the Journal againſt the Waſte, which being rightly adjuſted and ſtated by reading particular by particular, and rectifying where any thing appears to be amiſs, which done the next thing is comparing the Journal with the Ledger, repoſting every Parcel, as if you were in earneſt poſting it anew, and againſt each mark making a prick. As for Example,

When

When you have posted a debt that the Figures will stand thus $\cdot\frac{17}{19}$, and when you have examin'd both debt and credit, and they stand the same, if you should have occasion to prick your Book twice, before you can find the defect it must be in this manner $::\frac{17}{19}$, or it may be thus $:\frac{17}{19}:$, denoting one and the same in effect.

The Balancing a pair of Books, is understood by taking a Sheet of Paper and setting the Balance of each Account, for the better comparing, under one another, the debt intire and the credit the like; and if it so fall out, that both sides do equally Balance with one another, then are the Books right, but if they fail to give you satisfaction herein, then are they wrong and must be pricked and tryed till the defect is found out: And thus much for the Traders instruction, in keeping and rightly stating his Books, which with a little Practice and small Improvement, may make even the Ignorant perfect in this so necessary part of Affairs.

CHAP. XIII.

Things to be considered in weighing and taking up Good's, Entering and Marking, Tare and Fret, what they are, and of making Bills of Parcels, with many other things appertaining to Trade, &c.

THere are several things to be considered, though a Trader may not very often be concerned in them; but before I come to particulars, I shall give these general directions, which ought

to

to be obſerved, by reaſon a Man, at one time or other, may be intereſſed for himſelf or his Friend in Affairs that require the knowledge of them.

If your Buſineſs call you to the taking up or receiving any Goods, ſet down the place from whence they came, and upon what occaſion, rehearſing the particulars as much as will ſtand with your conveniency, with the marks of the Caſks, Cheſts, Bales, &c. and after that their Totals, that is, what they are in Eſtimate as to Meaſure, &c. and if you find them valued in the Bills of Lading in Foreign Coin, you muſt reduce it in value to *Engliſh* Coin, the Eſtimate or pair of which I have already laid down for your better underſtanding, taking an exact account of the Cuſtoms and petty Charges, with the unlading the Goods, Porterage, Wharfage, Literage, Cellerage, Car-men, &c. and of Brokerage if any be required, that you may be able to know the Profit and Loſs your ſelf, and conſequently make another underſtand it; and if the Goods come to weighing, where there is generally one weigher for the Buyer, and another for the Seller, you muſt be careful to take an exact account, and ſee you be not over-reached by the overſliping of a weight or a falſe placing, which many times happens, to the loſs of the Buyer; for although he afterwards may diſcover it, yet it frequently happens when it is too late to have any abatement, without trouble and falling out: And the like muſt be obſerved in Meaſures, a due proportion of which I have already given, and for the obſervance of which, though there is great care taken, yet frequently there happens a Failure.

As for the marks of Goods, they are many, and thoſe very different, either in Letters or Cyphers at the diſcretion of the party, though

ſome

ſome to put a gloſs upon their own Goods have marked them with another Man's mark, of the diſadvantage of which they have been frequently made ſenſible, by their miſcarriage or miſtaken delivery.

The number moſt proper to Caſks, thus N° 1. and ſo onward to as many as there are of them, or to what number ſuffices, whereby they are diſtinguiſhed from one another, that if there be a defect in any of them, it may be known from whence it came and ſo reparation had, or if there be a diſtruſt of the weight or meaſure, it may without much trouble or difficulty be ſingled from amongſt the reſt to decide that ſcruple: Neither is this all but you ought to obſerve the Tare of the Caſk or Pack.

Tare ſignifies the weight of the Caſk, Pack, Cheſt, &c. and relates only to ſuch things as are bought by weight, for it may altogether be accounted unreaſonable, that the Buyer ſhould pay the ſame value for the Caſk as for the Goods, when frequently they are ten times the value; ſo that according to Cuſtom of Trade, there is an abatement for the weight in Tare; ſometimes as the mark is ſet upon the Caſk or wraping upon Packing, and ſometimes by weight after the Goods are taken out, and that which is marked upon the Caſk or Pack, &c. is called the Invoice Tare, ſignifying that the weight has been conſidered before the Goods were put up, and thoſe that are not ſo marked are either by Eſtimation or Weight after the Goods are taken out, conſidered; and divers there are that are held at a certain Eſtimate, eſpecially Tabaco; for according to the hundred weight, ſo the Hogſhead is reckoned; as for Example, ſuppoſe you have ſeven Hogſheads or the like of any Commodity by weight.

Having

Having ſet down your weight before you part from the Scale, call them over with the party that weighs them againſt you by compariſon or equality of ſetting down; compare likewiſe your draughts, and if any difficulty ariſe, take care ſo to manage it that it be adjuſted before you part, by giving your ſelf rather than fail, the trouble of weighing it over again; and thus you will not only clear your aſſertion, but be ſatisfied you have your weight; and to know the better the exact method obſerve the following Rule.

		C.	q.	l.	Tare	C.	q.	l.
℔ N°	1	4	3	17	———	0	2	14
	2	6	2	14	———	0	3	27
	3	6	3	17	———	0	2	16
	4	8	1	21	———	0	3	15
	5	7	3	14	———	0	3	22
	6	5	2	19	———	0	3	27
	7	4	3	17	———	0	3	21

There is moreover a diſtinction in weighing between what we call Neat weight, and that which is called Groſs, for between Groſs and Neat or Satle, is an allowance for Tare, as likewiſe Loſs and Damage, the draughts being likewiſe conſidered and comprehended, a Pound in that caſe being allowed to every Hundred, and the difference between the Satle Hundred and the Groſs Hundred is Twelve Pounds, the firſt being accounted only Fiveſcore, and the Latter Fiveſcore and twelve Pounds, and is called the Great Hundred, as the other is the Small Hundred.

As for bringing the Groſs Hundred into Satle Pounds, you muſt Multiply in this manner.

Firſt,

	C.	q.	l.
Firſt, ſet down the ſumm	63	3	20
Secondly, ſet down 4 and the C.	4		
Thirdly, draw a Line, and Multiply the 63 by 4, taking in the odd quarters.			255 28 2040
Fourthly, put down 28, and Multiply by that, adding the Pounds—			512 7160

To Free-men of *London* there is likewiſe an Allowance called Fret, which is one Pound given in manner, or rather through Cuſtom, by the Seller, unleſs the Bargain be made to the contrary, and no Fret be to be allowed, but ſuſpended, by reaſon of the cheapneſs of your Agreement, and it muſt be deducted before the Goods are caſt up, and the better to do it without miſtake, firſt ſet down the Pounds, as 7160 Pound; ſecondly divide them by 26, and what remains is the Fret, which you muſt deduct, and then the remaining part of the Goods are clear weight.

And foraſmuch as you muſt ever obſerve to Book your Bill of parcels as ſoon as you have taken it, and ſend the Paper along with the Goods, I have thought it convenient to ſet down the form of a Bill, in imitation of which, any other of the like kind may be made, &c.

The Form and Manner of drawing up a Bill of Parcels.

Mr. *Robert Wing* bought of Mr. *Abraham Toms* } *Lond.* 18 *Novemb.* 1687. at 1 Mon.

		C. q. l.		C. q. l.
℔ N°	1	6—3—17	Tare	0—3—17
	5	6—2—12		1—0—2
	7	6—3—24		1—1—14
	8	7—2—14		1—0—7
℔	10	6—3—22		0—3—24
	16	6—2—27		0—2—17
	14	7—3—4		1—0—4
	17	6—3—4		1—0—9
℔	19	7—2—7		0—3—17
	20	9—3—2		0—2—27
Groſs		73—3—00		9—2—20
Tare		9—2—20		
		63—3—22		l.
			makes	7160
			Fret	257

6884 ½ *l.* at 7 *d.* ½ *per l.* 21529 ¾.

CHAP. XIV.

Directions for Entering at the Cuſtom-houſe, and Shiping of Goods, and what ought to be conſidered in Exporting or Importing Commodities, with the form of Receipts and Bills of Lading. Brokerage, what it is, &c.

IF you deſign to Ship any Goods or the like, that you may not be at a loſs to know what you muſt do in that caſe, take the following directions, &c.

Having

Having packed up your Goods in order to be Shiped and ſent away, or if Goods that pay Cuſtom, &c. if they are to be received, carry to the Cuſtom-houſe the true contents of the ſaid Goods, and get them entered according to the uſual manner; for by reaſon of the variation of their method, no certain rule of direction can be particularly given; yet giving the contents of your Goods to one of the Clerks, there is ſuch care taken that you ſhall be diſpatched in your turn, and having found out the firſt, he will direct you to the next, and ſo in courſe till you have the Commiſſioners, or Farmers hands, with the Seal of the Office, and for this no Clerk will venture to take above his juſt Fees, for if he be found ſo doing, redreſs is to be had upon the leaſt complaint to the Commiſſioners or Farmers. The Coquet obtained, which is a piece of Parchment certifying the payment of the Cuſtoms, and all the Duties for the Goods mentioned, you have no more to do, but to mark 'em, and ſet down their number on the back ſide of your Coquet, mentioning the true contents; and ſo with his Fee deliver it to the head Searcher, and nothing elſe remains but the payment of Wharfage and Porterage, &c. but if you ſend them on Board it will be requiſite to have a Note from the Maſter, the Mate, or the Purſer, that they are ſafely Shiped, and this Note moreover muſt ſpecifie the marks and number, and may be thus.

Received the eighth of December, 1687. *on Board the good Ship the* Eagle, *bound by the bleſſing of God to* Smyrna, *eight Bales marked and numbred,* ℔ viz. N° 1, 2, 3, 5, 9. 10, 13, 16. per *me* James Williamſon, *Maſter*, &c.

And when you have this Note, you muſt go to the Maſter, and upon ſhewing him it, procure him to ſign you a Bill of Lading, which ſpecifies an

an acknowledgment of the Goods, promiſing ſafely to deliver them at the place required, though with ſome exception, in caſe of Caſualty, the Form of which runs thus.

The Form of a Bill of Lading.

SHiped by the Grace of God in good order and well conditioned, by you James Willis, *in and upon the good Ship called the* Eagle, *whereof is Maſter, under God, for this preſent Voyage,* James Williamſon *at* Blackwall, *and by God's Grace bound for* Smyrna; *that is to ſay Eight Bales of* ℔ 1, &c. *Stuffs being marked and numbered as in the Margin expreſſed, and are to be delivered in like good order and well conditioned, at the aforeſaid Port of* Smyrna *(the danger of the Sea, Pirates,* &c. *only excepted) unto Mr.* Thomas Tuel *or to his Aſſigns, he or they, paying for the ſaid Goods Two hundred Pounds, with Primage and Avarage, as is accuſtomed.* In witneſs whereof, *I* James Williamſon, *Maſter of the aforeſaid Good Ship, the* Eagle, *have affirmed three Bills of Lading all of this Tenour and Date, the one of which three being accompliſhed, the other two to ſtand void: So God ſend the Good Ship to her deſired Port in ſafety.* Amen. *Dated* December *the Eighth* 1687. at *London,* &c.

James Williamſon.

And by this means you are ſure to have your Goods ſafe delivered, or have ſatisfaction made you in caſe of defect; and ſince a great part of Trade, in relation to Buying and Selling, is carried on at ſecond hand, or by way of Brokerage, I ſhall not only explain the meaning of it, but give directions therein, which may be available to all conſiderable Dealers.

Brokers, in Trade, are for the moſt part ſuch as have been brought up to Buſineſs, and either fail'd or left off their Trades, and their Buſineſs is to find out good Bargains, and to give notice of

of them to Shop-keepers, where they underſtand they have occaſion for them, for which, in caſe of Purchace, they receive a Gratuity valuable, as the Bargain will bear, or their trouble, in overcoming the difficulties, or going too and fro requires, and frequently they help Shop-keepers to put off ſuch Commodities as lie heavy upon their hands to good advantage, keeping up ſuch Intelligence and Correſpondency that they are but rarely unfurniſhed of a Chapman for an indifferent bargain, and never for a good one: And when he has brought the Buyer and Seller together, if they differ in price he will uſe ſuch diligence that by perſwading the one to riſe and the other to abate, that he will cotton 'em in the end, and then he ſets down the particulars in a Book, not only for a private *Memorandum*, but that he may teſtifie the Bargain if any difference ariſe between the Buyer and Seller; and for every Hundred Pounds worth of Goods ſo ſold he is allowed Ten Shillings, but if there be no ſale, although his Labour and Induſtry has been great to promote it, he ſtands to the courteſie of him for whom he undertook it, and can demand nothing; nay, this great advantage the Trader has by it, for the Broker will inquire into the condition of the Buyer, ſo that the Seller ſhall not be impoſed upon by the Inſufficiency of the Party he truſts, and though in the very time of bargaining they will not expreſs any thing in words, leaſt an Action ſhould be brought againſt them; yet they will give a Nod or ſome other ſign that ſhall as effectually ſignifie their meaning, and of that the Law takes no Cognizance; they are likewiſe very neceſſary in helping Perſons that are deſirous to Travel or deal privately beyond the Seas, *&c.* to returns of Money and in many other caſes.

CHAP.

CHAP. XV.

Directions for Lotting Goods, and buying ſundry Commodities, by what means to know their Prizes, and what is Exported or Imported, &c. with the advantage accruing thereby.

THere are other ways of diſpoſing and ſelling Goods than in the Shop or Ware-houſe by Bargain, and chiefly of late, thoſe of allotting and ſelling by Candle, much in requeſt; and by reaſon many are Ignorant of the true method of Proceeding therein, I ſhall ſet it down.

This way called the Allotting is rather dividing to private uſes than ſelling, for when ſix or more perſons have bought a Ship Load or any great parcel of Goods of the Merchant which are dividable, then are they by an indifferent Perſon divided, as equally as poſſibly may be, into ſo many Lots as there are Buyers; and that there may no difference or diſcontent ariſe, the name of each Perſon is written upon a diſtinct piece of Paper and rolled up, when being well mingled, any Perſon that comes in next is deſired to lay a Lot upon every Parcel, and as their names are placed ſo the Lots are taken, and they upon Reputation, and ſometimes by Bond are bound to ſtand to it as a true Award.

The buying Goods by Lot is different from this, and is moſtly in uſe and eſteem by the *Eaſt-India* Company, though of late many have taken it up. The manner is thus, An inch of Wax-Candle is lighted and ſet up, when the Goods are divided into ſo many parts and Lots, and the Prizes

ſet

ſet upon each to advance in bidding; and in this caſe ſuppoſe a Lot happen to be One hundred Bags of Pepper at Nine Pence the Pound, then do the bidders riſe by a Penny or a Half Penny, as they think convenient, and he that bids moſt before the Candle expires is to have that Lot; and then another is put up, and as ſoon as the Party has bought he Seals and delivers a Bond for the Payment, at three or ſix Months as they can agree, yet the Goods are not delivered till the Money is paid; and if it happen that any diſpute ariſe, as when many bid at once ſo that it cannot be diſtinguiſhed who bid laſt upon the going out of the Candle, the Lot is put up again, and ſo continued till it is fairly bought, and ſo decided by the Perſons that attend the Sale as Judges of Controverſies, the majority of whoſe Hands give the bidder a right to it, and this is called *The Sale by Candle*: Yet Bonds are rarely given any where elſe upon the like Sale.

There is another thing neceſſary to the advance of Trade, aud the information of thoſe who cannot be conſtantly at the *Exchange*, or places where the Rates of Goods are daily to be known, and this is called *A Price currant*, and is no other than a piece of Paper Printed in moſt places where any conſiderable Trade is carried on, and in it expreſſed or ſpecified the Prizes that Goods are currant at at that time, and for which they will be ſold if required; and this notice being ſent about once a Week, a Trader may reap much advantage by it; for if he look into it for any Commodity he has a mind to buy, or ſuch as he hath by him to ſell, he may know when to buy and when to ſell at profit, without inquiring after Chapmen or needleſly expoſing his Stock. A Merchant may likewiſe be informed what his Goods are worth, and what they will yield before they come over;

and

and ſo having his Charges ready caſt up, he need be at little trouble and leſs care in diſpoſing of them.

Another thing there is very uſeful in Trade that comes out in Print, and is called *The Cuſtom-Houſe Bill*, and is to be had every day except Holy-Days, and in it the ſeveral Goods Imported are ſet down by themſelves, as likewiſe thoſe that are Exported by themſelves, with the place they are Imported from, the Merchants name that Imports them, and the quantity of Goods, and the ſame as to Goods Exported, according to their Enteries, as thus,

W. M. Merchant of *Lond.*
Paris, 100 Cloths.
Cadiz, 100 Bags of Ginger.

And ſo of the reſt as they fall in courſe.

CHAP. XVI.

Bills of Exchange, what they are, together with their Power and Efficacy, the manner of Drawing them, and managing them to the beſt Advantage, in the way of Trade.

SEeing there are but few Traders, that deal any thing conſiderable, altogether freed from receiving or paying, at one time or other, Bills of Exchange; and, for that the manner and method to be obſerved therein, is not altogether common, I have thought it convenient to give the beſt directions for the Security of the perſon that draws the Bill, he that pays it, and he that receives it; and of theſe in their order.

As

As for a Bill of Exchange, by long Cuſtom and the conveniencies that accrue thereby, it is at this day held to be ſo excellent a ſpeciality, that it carries along with it, as it were, a commanding power, being taken notice of, and, for the moſt part, ſatisfied with ſuch exactneſs, that nothing can be more, though drawn by a Factor or Servant upon the greateſt of Traders. For, upon the Payment thereof, depends in a manner the Credit of him that draws it, and him upon whom it is drawn: by reaſon of non-Payment a Proteſt is made, which in a ſhort time, being at leaſt whiſpered abroad, makes others cautious how for the future they deal with thoſe men, and puts the former likewiſe to charges by having proteſt returned with his Bill, &c. And of theſe Bills there are two ſorts, though tending to one and the ſame purpoſe, (*viz.*) Out-land and In-land Bills: As for the firſt ſort, they are drawn upon Merchants, Bankers, &c. living in Tranſmarine Parts; the ſecond upon Merchants, Bankers, or Dealers in the ſame Country, though diſtant from each other; and are drawn upon Sale of Lands, Bargains, Traffick, and many other occaſions, requiring the returns of Money, but are in weight alike in due obſervance.

As to an Exchange, four, three or two perſons may be reaſonably concerned (*viz.*) two at the place where the Money is taken up, and two where it is payable: As thus, firſt, the perſon that delivers, ſecondly, he that receives, thirdly, he who is to take the Money, and laſtly, the perſon upon whom the Bill is drawn; or, in caſe of three perſons, thus; firſt, the taker, ſecondly, the deliverer, and thirdly the perſon on whom the Bill is drawn. If two perſons, then firſt, the drawer, and ſecondly, the perſon on whom it is drawn; the former ordering the Bill payable to himſelf or, &c.

There is likewiſe another ſort of Exchange, and that is called a dry Exchange; and this is only to evade the Statute of Extortion, and is thus managed. If a perſon has preſent occaſion for a ſumm of Money, he repairs to a Banker, and there is furniſhed upon giving a Bill of Exchange to repay it at *Amſterdam*: but the Bill becoming due, and no ſuch payment made; for, indeed he who draws the Bill has no Correſpondent in the place mentioned to receive it, a Proteſt comes over with the Bill, and ſo the money is paid by the Drawer, with Coſts. And much to the ſame purpoſe is another way, called the Feigned Exchange, but that not being to my purpoſe, I ſhall omit it, and come to what is more uſeful in way of Trade.

As for the Pair, it is nothing more than reducing Foreign Coin to an Engliſh value. I have already mentioned it; and for the form of an Engliſh Bill of Exchange, it is thus, if In-land.

Laus Deo. In *London*, this 30th. of *November*, 1687.

For Fifty Pounds Sterling.

AT Six days ſight pay this my firſt Bill of Exchange to Mr. James Turner, *or his Aſſigns, Fifty Pounds Sterling, for the value here received of Mr.* Richard Wadſworth. *Make good payment, and put it to Account, as by advice.*

Your loving Friend,

To *Mr. Samuel Arnold*,
Mercer, d. d. Pma. in *York*.

George Willmot.

If it be an Out-land Bill it differs only in place, and very ſeldom in the form, however you muſt expect to have a Letter, ſignifying that ſuch a Bill is drawn upon you, expreſſing the Contents, and upon what account, which is commonly called a Letter of Advice, and is to prevent any perſons forging a Bill upon you; and the Letter is frequently

quently ſent before, though ſometimes with the Bill incloſed in it, when there is no ſcruple in the Fidelity of the taker, or Party to whom the Bill is directed. And if a ſecond bill come, then you muſt have it ſuperſcribed (*viz.*) my firſt bill not being paid, pay this my ſecond bill, *&c.* and ſo to the third: And if he that under-writes the bill, makes himſelf Debtor, then muſt it be expreſſed, (*viz.*) and put it to my Account: but if he ought to pay it, then he muſt write, put it to your Account.

The Form of an Out-landiſh Bill in Engliſh thus, &c.

Laus Deo. In *London* this 30th. of *November*, 1687.

For 100 l. *at* 33 s. 8 *d.* Flemiſh per *Pound.*

AT *Uſance pay this my firſt Bill of Exchange to* Van Doulos Legar, *Merchant, or order One hundred Pounds ſterling, at Thirty ſix Shillings eight Pence* Flemiſh, per *Pound, for the value here received of Mr.* George Thomas. *Make good Payment, and put it to Account, as by Advice.*

Your loving Friend,

To Mr. *William Wallis,*
Merchant, d. d. Pma. *James Mellior.*
in *Rotterdam.*

And ſo the ſecond or third, at double or treble Uſance, if the firſt be not paid; or, if it be paid, if there be more upon the Account, or your credit is good, the like may be ſpecified.

If ſo it happen, that any bill be negotiated by Exchange, or the Money taken in, and ſo to be Aſſigned over to another man; then the aſſignment muſt be written on the backſide of the bill in this manner, (*viz.*)

Pay the Contents on the other ſide hereof to Mr. Gabriel Keeling, *or Aſſigns, for the value received*

of *Mr.* William Wills. *London*, 30th. *November*, 1687. *William Sims.*

And if ſo it happen, That *Ghariel Keeling* does likewiſe aſſign the ſame billfor his Account, then it is requiſite to write it only thus. *(viz.)*

Pay the Contents hereof to Mr. James Cole.

And in the like manner upon all bills, as for the time given it differs, according to the diſtance of place, and for the moſt part either depends upon the pleaſure of the Drawer, or as he can agree with him that is to take or receive it, and ſometimes the badneſs of the Seaſon is conſidered; that ſo, it being long kept from the parties hands who is to pay it, he may not be ſurprized by a bill's coming to him juſt as it grows due.

CHAP. XVII.

Things very proper and material to be obſerved, relating to Bills of Exchange, whereby all parties may not only underſtand what is to be done on that occaſion, but do it with eaſe and ſafety, &c.

LET the Dealers care be to take a *Memorandum* in a book of the perſons aboad, who preſents the bill, and keep Copies of thoſe he ſends to get accepted, and make the Directions of bills on the Inſide, that ſo by knowing the place his trouble may be the leſs, ever excepting againſt the ſecond bill, the firſt not being ſatisfied, and by his taking Copies ſent to be accepted he may know how Exchanges (if his Talent lie that way) go in all Places, and without trouble know the day he is

to

to call for his money, and upon whom; but to come to things more material to be obſerved, &c.

1. If a bill after acceptance be proteſted, it does not in the leaſt clear the party who was faulty in non-Payment, but makes him liable to pay the Charges, &c. though the Drawer is not excuſed, but liable to ſee the bill ſatisfied.

2. It is not ſafe for any perſon to make a bill payable to the bearer, leaſt happening to be loſt, or to miſcarry, it ſhould be paid to the wrong party; for if in this caſe it ſo happen the perſon who paid it is not liable to a ſecond Payment.

3. If a bill happen to be drawn on two perſons and but one of them accept it, and they are jointly concerned in it, you ought to Proteſt notwithſtanding, if the other refuſe to accept it.

4. If a bill upon being preſented be only accepted by word of mouth, and the party afterward refuſes to ſubſcribe it, yet if it be left in his hands, the acceptance is held ſufficient.

5. If a bill happens to be accepted for part, and not for the whole, then may the perſon who propoſes it give an Acquittance for ſo much Money; yet muſt he enter Proteſt for the non-Payment of the reſt, and ſend it away.

6. Note that the Perſon who draws the bill, is Maſter of it till it becomes due, and may ſend it any time before then to countermand it, or not to pay it till further order, which order muſt be made and paſſed before a Publick Notary, and Notified to the Party who has accepted the bill, but it muſt be before the Payment, or it is Invalid.

7. If a bill be drawn upon a Party out of Town, he not being at home, his Wife or Servants are not bound to accept it, unleſs he has by a Warrant of Attorney impower'd them ſo to do; yet if they pleaſe, for the credit of the Merchant or

Drawer, they may do it, yet Proteſt muſt be made againſt the Party on whom it was drawn, for non-acceptance; and note that all bills where there is a defect in Payment, muſt be Proteſted three days after they become due.

8. If a bill accepted be loſt, then muſt he who brought it, demand a Note of the Party's Hand and Seal, who received the ſaid bill for the Payment of the money, at the day ſpecified in the bill, upon a ſecond bill if it come to hand; or for want of it, upon the Note it ſelf; and if a Note be refuſed, Proteſt muſt be entered and ſent away; and when the Money becomes due upon the ſecond bill, it muſt be demanded, and a ſecond Proteſt as the former for non-Payment, &c.

9. If any Party happen to die between the time of acceptance and the bills becoming due, then muſt he, who was to receive the money, go to the place of his aboad, and demand it when due of the Executors; and if payment be refuſed he muſt Proteſt as if the Party were living; and on the contrary, if it ſo happen, that the Party to whom it was payable die before the Bill is due, then ought it to be demanded upon Security to ſave the Payer harmleſs, though no Will be proved or Adminiſtration taken out, and Proteſt made upon refuſal.

10. If ſo it happen, That a bill be made payable to any one perſon, exactly and abſolutely by name, then cannot he aſſign it over to another; for if ſo, he that pays it to his Aſſigns pays it to the wrong Party, and may be liable to pay it a ſecond time, &c. Theſe and many the like Rules are to be obſerved in this way of Dealing, and indeed are very neceſſary to be known by all Traders.

CHAP.

CHAP. XVIII.

Letters of Credit, in way of Trade, what they are, together with their Uſe, Validity and Form.

LEtters of Credit are exceeding uſeful where a Man's Buſineſs or Affairs are Latitudinary, and ſometimes they are openly directed without diſtinction to any perſon who will furniſh the Party that carries them with Goods or Monies, on the account of him that intruſts him with them; and in ſuch a caſe they are as binding for the Goods or Summs received, as if a Bond under Hand and Seal had been given. But the moſt uſual are private Letters directed to peculiar Perſons, and are called *Special Letters of Credit*, being of equal force and validity with the former, and are written ſuitable to the Occaſion that requires them, in form and manner thus:

Laus Deo. *In* London 13*th.* November, 1687.

Mr. William Durham,

SIR, My laſt unto you was of the Tenth of Auguſt, *wherein I wrote to you what was needful in Anſwer unto your's of the Fifth of the ſame Month. This ſerves chiefly to deſire you to furniſh and pay unto Mr.* James Smeton, *credited by me, the value of One hundred Pounds ſterling, or ſo much value in Goods as he ſhall think neceſſary or convenient to require, at one or more times, ſtanding with his conveniency, according as he ſhall have occaſion,* &c. *taking his Receipt or Bills of Exchange for the Monies or Goods, with which you ſhall ſo furniſh him,*

and put it to my Account, and this my Letter of Credit ſhall be your ſufficient Warrant for ſo doing.
Vale.

Yours

To Mr. *George Willton*, Clothier, at *Norwich.*

T. Milton.

And ſo of any of this kind, varying in nothing but the Name, Place, Date, Summ or Goods, as the matter requires, or ſhall be found convenient.

CHAP. XIX.

Conſiderations of great weight and importance, in relation to Trade, laid down in a Survey of the Port of London *and the Duties, with their due management appertaining thereto.*

London being the principal Seat of Trade, and though many things may be ſpoken of it already, yet it will not be amiſs for the advantage of the Traders therein to make ſome further Remarks, or give ſuch notes of Directions, as may prove abundantly advantageous in the management of Buſineſs or Affairs, *&c.*

The Port of *London*, as by Exchequer ſetled and declared, begins at the *North Fore-Land* in the Iſle of *Thanet*, extending thence Northward to the *Naſe-Point* upon the *Eſſex* ſhore, paſſing Weſtward up the River of *Thames* to *London-Bridge* for Shiping, *&c.* And that frauds may be prevented

vented in Landing Goods at places known, the following are conſtituted and ordained as legal, for Landing Wares and Merchandiſe, &c. *viz.* *Bear-Key*, *Cheſters-Key*, *Brewers-Key*, *Wiggons-Key*, *Youngs-Key*, *Ralphs-Key*, *Lyons-Key*, *Smarts-Key*, *Hammonds-Key*, *Buttolphs-Wharf*, *Wool-Dock*, *Freſh-Wharf*, *Cox-Key*, the *Bridge-houſe-Wharf*, and *Billings-Gate*: Though the *Bridge-houſe* is only for Corn, and *Billings-Gate* for bringing in of *Fiſh*, *Salt*, *Victuals*, *Fruits*, (*Grocery* excepted) as likewiſe for bringing in all manner of Fuel, all native materials for building, and for exporting the like, but no other Merchandiſe. There are other places allowable of this kind; as the *Cuſtom-houſe-Key*, *Sabs-Dock*, *Dice-Key*. *Smmmers-Key*, *Gaunts-Key*, &c.

Theſe Keys, Wharfs, and Docks procure yearly a great In-come towards the ſupport of the Grandure of the City, by Scavage, Porterage, Package, and Water Bailage; and becauſe ſome may be Ignorant what theſe mean, I ſhall explain them.

1. Scavage is an ancient Toll or Cuſtom taken by the Mayor and Sheriffs, for Wares expoſed or offered to Sail within their Precincts, conſiſting of two parts, *viz.* that payable by the Citizen or Freeman, and that payable by the Stranger or Alien. And as for the duties in ſundry caſes to be paid on this kind, there are Tables to inform the party for that purpoſe mentioning each particular, too tedious here to be Inſerted, yet note that all Goods mentioned in the Table of Scavage, and not included in the Table of Rates, muſt pay after the Rate of one Penny in the Pound, according as they are expreſſed or valued in the King's Book of Rates; and all others not expreſſed therein ſhall pay the like rate according to the Intrinſick value.

All private Bulks of Eight Inches ſquare according to the third Article Annexed to the Book of Rates, are accounted as Timber, and valued at three Pence the Foot, Fifty Foot being reputed the Load valued at twelve Shillings ſix Pence, and the duty for one Load is one half Penny and half a Farthing.

Package is a duty that is rated in the Table of Package duty, and all Commodities therein mentioned pay one Penny in the Pound, conſiſtent with their rate in the King's Book of Rates, and the reſt mentioned therein are to pay at one Penny in the Pound according to the Intrinſick value.

For every entry in the Package Book, and for writing every Entry outwards, the Fee is twelve Pence.

All Strangers are likewiſe obliged to ſatisfie the labouring Porters for the making up their Goods according to Cuſtom. They likewiſe pay the water ſide Porters appertaining to the Package-Office for Shiping and Lading, and for this either of them have Tables of Fees or demands by Cuſtom, and ſuch Goods as are not mentioned therein muſt be truly valued and paid accordingly ſo much *per* Pound as aboveſaid.

Water Bailage is an ancient Privilege and Cuſtom requiring a ſmall duty for all Merchandiſe, imported from any part of the Realm or out of the Realm, into the Port of *London*, and ſo the like duties with ſome variation out of the Port, *&c.* except the Goods or Merchandiſe of Freemen, which are in this caſe exempted; though ſome in compliance herewith voluntarily ſubmit, and that peradventure unrequired, to pay it, notwithſtanding there have been of late ſome debates, whether it be due or not, and yet no clauſe in the Act of Tonage or Poundage any ways bars this duty. And all Lighters, Wherries, Fiſher-Boats, and o-

thers

thers Trading or Occupying the River, pay certain duties or ſumms as Acknowledgment, &c.

The Citizens of *London* Reſidentiaries are exempted from the Duty, Cuſtom or Impoſt, called Prizage, which is, that the King paying twenty Shillings is to have one Tun of Wine out of ten; yet if a Free-man live in another City, and ſend Wine to be unladed at the Port of *London*, he ſhall not have the benefit of this Privilege, according to a private Act of the 24*th*. of *Henry* the 6*th*. And it is further obſerved, that if a Merchant Stranger or ſuch as are not Citizens, break Bulk, though but half be vended yet the duty is to be levied upon all, as if he had unladen the whole Cargo; and this Privilege the Reſidentiaries in the Cinque-Ports enjoy, &c.

Butlerage is a duty of two ſhillings *per* Tun upon Wines Imported by Strangers, but the Natives are exempted from it, as well thoſe that are not Citizens as thoſe that are; and thus much briefly for what concerns the Port of *London*, touching the Trade thereof.

CHAP. XX.

Ports, Members and Creeks in general, what they are, and what Commodities of the Native Product and Manufacture may be Exported at certain Rates and Prizes, and at what Rates and Prizes not, &c.

AS for Ports or publick places of Landing Goods or Merchandiſe, they are places to which the Officers of the Cuſtoms are appointed, and

and have Prehemency of their Members and Creeks, claiming and including the Guidance and Privileges of them.

The Members are ſuch places as formerly had Cuſtom-houſes, or Offices appointed them, and have yet Officers or their Deputies attending; hey being held lawful places of Lading or unlading any but Prohibited Commodities.

Creeks are ſuch places where Officers do or have formerly given their Attendance by way of Prevention, not out of Right or Duty; and are not held places lawful to Land or Lade Goods without Licence or Sufferance from the Port or Members, under whoſe Juriſdiction or Cognizance they are: And from theſe upon notice given, and Cognizance taken of them, may the following Commodities of Stores and Proviſions, according to the 12*th.* of *Car.* 2. when at the Prizes mentioned, be Exported, unleſs a Prohibition prevent it; *viz.*

Wheat, Peas, Beans, Rye, Barly, Oats, Malt, Beef, Cheeſe, Bacon, Pork, Butter, Candles, Gunpowder, *&c.* when they do not exceed the Prizes following at the Ports, *&c.* where they are Laded at the time of their Lading; *viz.* Wheat 2 *l.* the quarter; Peas, Beans, Rye the quarter 1 *l.* 4 *s.* Barly and Malt the quarter 1 *l.* Oats the quarter 16 *s.* Beef the Barril 5 *l.* Pork the Barril 6 *l.* 10 *s.* Bacon the pound 6 *d.* Butter the Barril 4 *l.* 10 *s.* Cheeſe the hundred weight 1 *l.* 10 *s.* Candles the dozen pound 5 *s.* Gunpowder the Barril 5 *l.* paying the rates reſpectively as they are ſet down in the Book of Rates.

CHAP.

CHAP. XXI.

A ſhort Survey of matters belonging to Tonnage and Poundage, in the moſt material things relating thereto, conſiſtent with Trade, &c.

FOR French Wines Imported or brought into the Port of *London*, the ſtranger, it being his proper Goods, pays Forty Shillings *per* Tun more than the Native, but into any other Port only twenty Shillings; and for Spaniſh Wines brought into the Port of *London*, the Stranger, it being his proper Goods, pays thirty Shillings *per* Tun more, but into any other Port only twenty Shillings, but as for Prize Wines, they pay no Cuſtom. And if ſo it happen, any Wines be imported, and within a Twelve month Exported, they muſt have a return made them if the whole duty be paid, as in 12. *Car* 2. it more largely appears; and if any Wines are Landed at an out Port, and afterward brought to the Port of *London* by a certificate, the owner ſhall pay ſo much more as he paid ſhort of the duty, in the Port of *London*.

For Beer Exported in Engliſh built Ships, each Tun pays two Shillings, and in any other Ships ſix ſhillings *per* Tun; and if it ſo happen that at any time there chance to be Goods Exported or Imported, not mentioned in the Book of Rates, and by ſuch omiſſion are found at no ſet value, then it is lawful for the Cuſtomer in being, to Levy twelve Pence in the Pound upon ſuch goods at a true Eſtimate or value of them, given by the Merchant or Owner, upon Oath, &c.

Vine-

Vinegar, Cyder, Perry, Rape, or Cyder Eager, Imported by a Stranger, pays ten Shillings leſs in the Tun, than if Imported by a Native, by reaſon they ſhould be the more diſcouraged from bringing in what in a manner is our Native growth, *&c.* And in caſe they be Exported again, then a proportionable return, if the duty be paid, is returned or made, as in the former. There is likewiſe impoſed on Wines, Vinegar, Cyder and Beer ten ſhillings *per* Tun, and on Brandy and Strongwater twenty ſhillings *per* Tun, Coynage duty payable to the Cuſtom-houſe; but by the Officers Collectors to be kept apart from other money, and paid quarterly into the Exchequer without Sallary or Fee, *&c.* and if neglect in the payment of this duty be made, the Goods are adjudged forfeitable: But again note, that if within a year following they be Tranſported, then the money ſo paid is to be returned according to the 18 of *Car.* 2. There is alſo an Exciſe upon Foreign Liquors Imported, *viz.* upon Ale or Beer ſix Shillings the barril, Perry or Cyder the Tun ten Shillings, Srongwater or Brandy perfectly made eight Pence the Gallon, and according to the 15. of *Car.* 2. if any of theſe be Landed, the duties not paid and Warrant ſigned, they are forfeitable. And thus have I briefly ſpoken of the material matters relating to Tonage, as far as they conſiſt with my purpoſe, from which I ſhall proceed to give many Inſtructions to young Traders, eſpecially in that which relates to Poundage; ſo that by a right underſtanding they may proceed regularly in all this buſineſs without interruption.

CHAP.

CHAP. XXII.

Poundage; what is materially to be considered therein, to the benefit of the Trader, &c.

THis important Custom, *&c.* of Poundage is established by an Act of 12. *Car.* 2. being a Subsidy granted in Parliament to the King of the twentieth part of all Goods Exported or Imported, *viz.* one Shilling in the Pound, according as the Goods in value stand in the book of Rates; as likewise there is a Subsidy for old Drapery, the duty of which is, *viz.* for every short Cloth not above twenty eight Yards in length, nor exceeding sixty four Pound in weight, white or coloured, and Shiped by a Native to be Transported, three Shillings and four Pence; and after the same Rates for all other Cloths of greater length and weighing more, not allowing above twenty Yards in length, and sixty four Pound weight to a short Cloth; but for every pound over and above in weight two Farthings and one half Farthing; and as for all lesser Cloths they are to be allowed to the short Cloth. And if it so happen, that a Stranger Export any short Cloth containing twenty eight Yards, not exceeding in weight sixty four Pounds, either coloured or white, then shall he pay six Shillings eight Pence over and above the old duty, and after the same rate for all short Cloths, and Cloths of greater length and weight.

Salt out of *Scotland* into *England* pays four Pence the bushel, and Logwood five Pound the Tun Imported. There are likewise divers Customs or Duties papable by Aliens for goods Imported, in Aliens Ships usually called *Navigation Duties*, setled

ſetled by an Act of Navigation made in the 12. of *Car* 2. And further take notice, that in every caſe where petty Cuſtom is inward payable, it is underſtood and taken for the fourth part of a Subſidy according to the Book of Rates of five *per Cent.* and is called *Parva Cuſtoma*, and was granted to King *Edward* the Firſt, the Merchants agreeing to pay him three Pence in the Pound, for every twenty Shillings worth of Goods, Imported or Exported.

There is likewiſe a Cuſtom uſually called *The Alien's Cuſtom*, for all Fiſh, Oil, Blubber, Whalebone, or Whales Finns, not taken in Engliſh Veſſels, or of which the Engliſh are not proprietors before it be imported; and in ſuch a caſe they are to pay double Cuſtom. A further Impoſt there is of this kind for divers ſorts of ſalted or dried Fiſh as appears by a Statute of the 15. of *Car.* 2. Intituled *An Act for Trade, &c.* As for all ſorts of Foreign Coin, Bullion of Gold or Siver, it may be Exported upon due Entry at the Cuſtom-houſe; as likewiſe Precious Stones and Pearls of all ſorts, without paying any Duty or Fee; and any perſon may Import from any Parts beyond the Seas in Engliſh Veſſels Nutmegs, Cloves, Mace Cinnamon into *England*, *Wales*, *Gerſey*, *Guernſey*, &c. entering them before Lading and paying the Cuſtom, giving over and above notice how much, and upon what Ship it is to be Laded. If ſo it happen that Goods are wrecked and the Lord ſeize them, they ought not to pay Cuſtom, unleſs in ſome extraordinary caſes.

If ſo it happen, that Companies or Societies are Traders in a Joint Stock though they make but one Entry, yet the Fees are not ſo obſtructed but that the Officers and Weighers may receive gratuities, yet muſt it be by the conſent and free gift of the Merchants or Traders, *&c.* and all goods

valued

valued in the Book of Rates at five Pound and paying but five Shillings Subsidy, are exempted from Fees; and if it so happen, that a Merchant being a Native shall Land or shift Goods out of one Ship into another, notwithstanding the receipt of the Subsidy be distributed into divers Offices, yet he shall pay only for the single Entry. Fish taken in English bottoms pay no Fees inward nor outward; and thus much may suffice for Instructions of this kind.

CHAP. XXIII.

Instructions in relation to Letters sent by the Post to any Part of England, Wales, Scotland, Ireland, *&c. and their Returns.*

THat the conveniency of this is great, I need not insist upon, since every Dealer is sensible of it, those that undertake it, managing that great Affair with such Diligence, Speed and Exactness, that it may be termed the very Soul of Correspendence and Commerce. And from the head Post Office Situate in *Lombard-street*, *London*, being termed the General Office, Letters and Pacquets are sent on *Mundays* to *Spain*, *France*, *Italy*, *Flanders*, *Germany*, *Sweeden*, *Denmark*, *Kent*, and the *Downs*, &c.

On *Tuesdays* to *Denmark*, *Holland*, *Germany*, *Sweedland*, *Scotland*, *Ireland*, and to all Parts of *England* and *Wales*.

On *Wednesdays* to all Parts of *Kent* and the *Downs*. On *Thursdays*, to *France*, *Spain*, *Italy* and all Parts of *England* and *Scotland*.

On

On *Fridays* to *Flanders*, *Italy*, *Denmark*, *Germany*, *Sweedland*, *Holland*, *Kent*, and the *Downs*.

On *Saturdays* to all parts of *England*, and *Wales*, *Ireland* and *Scotland*.

From all parts of *England* Letters are returned on *Mondays*, *Wedneſdays* and *Fridays*, and the like from *Scotland*. From *Wales* every *Monday* and *Friday*. And from *Kent* and *Downs* every day, but ſuch as come from beyond the Seas, by reaſon of the uncertainty of the Whether, do not always keep certain days of return, nor can it be reaſonably expected.

A Letter containing one intire ſheet of common writing Paper is carried eighty miles for two Pence, and one of two ſheets double the price, and an ounce of Letters for eight Pence; and ſo for what exceeds proportionably.

A Letter containing one intire ſheet, convey'd above eighty miles is rated at three Pence, and two ſheets double the price, and every ounce of Letters twelve Pence.

A Single Letter is conveyed to *Dublin* in *Ireland* for ſix Pence, two Letters for double the price, and an ounce of Letters for twelve Pence. And to any place within ten miles of *London* Letters are uſually carried by the Penny-Poſt, an Office diſtinct from the former, and lately ſet up for the advantage of free Converſation by Letter, *&c.* and the price is one Penny paid by the perſon who delivers the Letter, *&c.* and is uſually in the hands of the party to whom it is ſent, in ſix or eight hours at the fartheſt Stage.

Note that of late the General Poſt Office takes in all Engliſh Letters, *&c.* to be paid at the place where they are delivered, unleſs the party who delivers them will voluntarily pay at the Office, *&c.* The rate of a Horſe to ride Poſt is three Pence every Engliſh mile, and four Pence every ſtage to the boy, *&c.*

CHAP.

CHAP. XXIII.

Foreign Letters or Pacquets, &c. *their Rates and other matters relating thereto.*

A ſingle Letter from *Morlaix*, *New-haven*, *Cane*, St. *Malois*, and places of the like diſtance, Carriage paid to *Roüen*, 6 *d.* double 1 *s.* ounce 1 *s.* 6 *d.* A ſingle Letter from *Cologne*, *Hamburg*, *Frankfort*, pays Carriage to *Antwerp* 8 *d.* double 1 *s* 4 *d.* ounce 2 *s.* A ſingle Letter from *Genoa*, *Venice*, *Leghorne*, *Naples*, *Rome*, *Meſſina*, and other reſpective Parts of *Italy* by way of *Venice*, *pro Mantua*, &c. 9 *d.* double 1 *s.* 6 *d.* the ounce 2 *s.* 8 *d.* A ſingle Letter from *Smyrna*, *Conſtantinople*, *Alepo*, or any part of *Turkey* to *Marſeilles* 1 *s.* double 2 *s.* an ounce 3 *s.* 8 *d.* And for all Letters brought from the above-named places into *England*, ſingle 8 *d.* double 1 *s.* 4 *d.* the ounce 2 *s.* And for Letters brought from *Calais*, *Diepe*, *Abbeville*, *Bologne*, St *Omers*, *Amiens*, *Montrel*, &c. ſingle 4 *d.* double 8 *d.* the ounce 1 *s.* From *Roüen*, ſingle 6 *d.* double 1 *s.* the ounce 1 *s.* 6 *d.* From *Genoa*, *Leghorne*, *Rome*, and other parts of *Italy*, by way of *Lyons*, ſingle 1 *s.* double 2 *s.* the ounce 3 *s* 9 *d.* conſidering always that a ſingle Letter muſt contain no more than an intire Sheet of Paper.

A ſingle Letter ſent Outwards, to *Bourdeaux*, *Rochel*, *Nants*, *Bayon*, *Orleans*, *Tours*, and places of the like diſtance, Port paid to *Paris* 9 *d.* double 1 *s* 6 *d.* the ounce 2 *s.* And for Letters from thoſe places paid in *England*, ſingle 1 *s.* double 2 *s.* the ounce 4 *s.* And for Letters ſent Outward, to *Noremburg*, *Dantzick*, *Bremen*, *Lipſwick*, *Lubeck*, and

and other places of like distance, at *Hamburg* Port paid single 1 *s.* double 2 *s.* the ounce 4 *s.* *Paris* single 9 *d.* double 1 *s.* 6 *d.* the ounce 2 *s.* To *Ostend*, *Lisle*, *Dunkirk*, *Cambray*, *Ipres*, *Ghent*, *Bruxels*, *Bruges*, *Antwerp*, and other places of the like distance in *Flanders*, single 8 *d.* double 1 *s.* 4 *d.* the ounce 2 *s.* To *Middleburgh*, *Sluce*, *Flushing*, *Delph*, *Hague*, *Rotterdam*, *Amsterdam*, and other places in *Holland* and *Zealand*, single 8 *d.* double 1 *s.* 4 *d.* the ounce 2 *s.*

Note that all Merchants Accounts, not containing more than a Sheet, Bills of Exchange, Invoyces, and Bills of Lading, are to be allowed without Rate in the price of the Foreign Letters, as likewise the covers of Letters, to *Marseilles*, *Leghorn*, *Venice*, passing towards *Turky*, they not exceeding a sheet: And thus much in brief may suffice on this occasion, and prove one way or other advantageous to the Reader.

CHAP. XXV.

A brief Discourse of Car-men and Watermen touching their Hireage, or being Employed in carrying Goods and Merchandise, &c. as by Regulation it is affixed, &c.

A Car-man may demand from any of the Wharfs between *London-Bridge*, and the *Tower* to *Bishops-Gate-street*, *Grace-Church-street*, *Fen-Church-street*, *Cornhill*, and other places of proportionable distance or somewhat more, for between eighteen and twenty hundred weight, two shillings two Pence,

Pence, and two Pence for every hundred over twenty.

And from any Wharf before included to *Loathbury*, *Broad-ſtreet*, the *Old Jury*, *Coleman ſtreet*, *Baſſiſhaw*, *Milk-ſtreet*, or any part of *Cheapſide*, or the Streets that open into it, for the like weight two Shillings ſix Pence, and for every over hundred two Pence. And from any of the aforeſaid Wharfs to *Temple-Bar*, *Smithfield-Bars*, *Holbourn-Bars*, or any other of the City Bars bounding the Liberty, with the weight aforeſaid three Shillings four Pence; and beyond them according as it can be agreed.

It is likewiſe ordered, That from any Wharfs aforeſaid to *Tower-ſtreet*, *Biſhopſgate-ſtreet*, *Cornhill*, and other places of the like diſtance up Hill, for a Load not exceeding eighteen hundred weight, only one ſhilling ten Pence ought to be taken, and ſo proportionable to the ſundry places within the Liberties of the City; though indeed as the difficulty of loading and unloading in many caſes requires, if we come to the merit of the cauſe, an agreement between the Lader and the Car-man muſt be allowed in equity, notwithſtanding there are Penalties that forbid exaction, and the Carman in this caſe has a great advantage, for if his Cart ſtands laden above half an hour, and he profers himſelf to unload it, for every hour in that kind he is detained or hindred from his Buſineſs, he may demand one Shilling; and in caſe of refuſal, if he complain to the Preſident of *Chriſt's-Hoſpital* he will have redreſs.

In caſe Goods are taken into the Tilt-Boot between *London* and *Graveſend*, a half Firkin, the Carriage is a Penny, the whole Firkin two Pence, the hundred weight of Groſs Goods four Pence, of light Goods, as Corn, *&c.* ſix Pence, and the like of an ordinary Cheſt, Trunk or Hamper, though

though the whole Boat taken up to peculiar uſe is one Pound two Shillings ſix Pence.

CHAP. XXVI.

Fixed Feaſts, their Days and Seaſons to be known upon ſundry occaſions, &c. *without the help of an Almanack for ever; as alſo the remarkable days throughout the year.*

CIrcumciſion or New-years Day, on *January* 1; Epiphany or Twelfth Day, on *Jan.* 6; the Converſion of St. *Paul*, *Jan.* 25; the Martyrdom of King *Charles* the Firſt, *Jan.* 30; Candlemas-day; alſo the Purification of the Virgin *Mary*, *Feb.* 2; St. *Matthias*, *Feb.* 24; the Annunciation of the Virgin *Mary*, vulgarly called our Lady-day, *March* 25; St. *Mark* the Evangeliſt, *April* 25; May-day, or St. *Philip* and *Jacob*, *May* 1; The Birth and Return of King *Charles* the Second, *May* 29; St. *Barnabas* the Apoſtle, *June* 11; St. *John* Baptiſt, or Midſummer-day, *June* 24; St. *Peter* the Apoſtle, *June* 29; St. *James* the Apoſtle, *July* 25; St. *Bartholomew* the Apoſtle, *Auguſt* 24; St. *Matthew* the Apoſtle, *September* 21; St. *Michael* the Archangel, or Michaelmas-day, *September* 29; *October* 14, the Birth day of King *James* the Second; St. *Luke* the Evangeliſt, *October* 18; St. *Simon* and St. *Jude*, *October* 28; All-Saints, *November* 1; Powder Treaſon, *November* 5; St. *Andrew* the Apoſtle, *November* 30; St. *Thomas* the Apoſtle, *December* 21; The Nativity of our Bleſſed Saviour, or Chriſtmas-day, *December* 25; St. *Stephen* the firſt Martyr, *December* 26; St.

John

John the Evangeliſt, *December* 27; Innocents-day, or the day *Herod* put the Children to death in *Bethlehem*, *December* 28; and conſider that in the Leap-year notwithſtanding it is accounted one of the fixed Feaſt days, that St. *Matthias* day falls out on the 25 of *February*; and for the remarkable days they are theſe, *viz.* Valentines-day, *Feb.* 14; equal Day and Night, March 10; St. *George* or his preſent Majeſty's Coronation day, *April* 23; St. *Barnabas*, or the Longeſt day, *June* 10, 11; Election day for Sheriffs of *London*, *June* 24; St. *Swithin*'s day, *July* 15; Dog-days begin, *July* 19; Lammas-day, *Auguſt* 2: Dog-days end, *Auguſt* 27; equal days and nights, *Sep.* 11, 12; Sheriffs of *London* Sworn, *Sep.* 28; Election of the Lord Mayor of *London*, *Sep.* 29; The Lord Mayors day when Sworn at *Weſtminſter*, *Oct.* 29; the ſhorteſt day, *December* 10, 11.

CHAP. XXVII.

Law-Inſtruction, how the ſpeedieſt and eaſieſt way to ſue for and recover good or bad Debts, with little Charge and Trouble, &c. *if recoverable,* &c.

CONſidering there are no Dealers in what way ſoever, eſpecially in any that is conſiderable, but muſt give credit, and in that let them be never ſo cautious, at ſome time or other bad debts will ariſe, or ſuch Controverſies upon account happen, that they are irreconcilable but by Law, my purpoſe now is to give the beſt and eaſieſt Directions how to recover and get in debts that ap-

appear deſperate, and that in the briefeſt manner and method, conſidering that to come to particulars in relation to Charges, &c. would be too tedious, &c.

If the perſon live in the City and the Debt exceed forty Shillings, you may enter an Action againſt him at any of the Compters, and by attaching his perſon oblige him to give Bail, the Officer when he has Arreſted him, being bound to take ſuch Security as may ſufficiently anſwer or be accountable for the Debt and Charges, and thereupon you muſt fee your Attorney, and declare againſt the perſon in order to Tryal, you may do the like if he be in Priſon; but if the Officer has taken his word, or he be in a Spunging-houſe, you cannot declare unleſs you go to Tryal by conſent, though upon complaint you may oblige the Officer to render his Body to Priſon, or ſee Bail given in; and if the Party make his eſcape after he is Arreſted, your Action lies againſt the Sheriff for your Debt, &c.

You may likewiſe bring a Writ of *King's-Bench* or *Common-Pleas*, and getting a Warrant made out upon either of them, attach the Party, and thereby oblige him to give Bail to the Sheriff, and afterward before a Judge; and if the Bail be defective you may except againſt it, being only taken conditionally, and ſo oblige the Defendant to ſwear his Bail in Court, eſpecially if you fear his going off, or the Debt be conſiderable.

A Writ of Exchequer likewiſe lies in *London* and other places, either by way of *Subpœna*, which any perſon may ſerve that is not an Officer, though it holds not to Bail, or a *Quo minus*, which will do it, and upon theſe you may proceed to Tryal, as upon the former. All debts ariſing and becoming due in *London*, being to be tried there unleſs the Avenue, upon a more than ordinary

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ſuggeſtionbe removed. And here a Female-Covert trading for her ſelf, out of her Husband's way or calling, her Husband being a Freeman, may be Arreſted and Impleaded, as if ſhe were a Maid or Widow.

If a Perſon abſcond and abſent himſelf from his buſineſs, ſo that he cannot be taken, and conſequently not Impleaded, you may file a Writ againſt him, which paſſing through the Philezers-Office, and ſo through the Petty-Bag, and Exigent after a due return that the man is not to be found and Proclamation made, you may take out *Capias, utlegatum*, and ſeize in Execution Body and Goods, as if there had been a Judgment obtained againſt him upon Verdict, though it is in his power by moving the Court, and paying Coſts, to reverſe it, and ſo come to a fair hearing, *&c.*

There is another way by Attaching of Goods or Monies within the City or Liberties, being in the Hands of a ſecond perſon; and being ſo Attached you may proceed to condemn them in Court with Coſts, unleſs upon notice the Party who owes you the Monies, and whoſe properly they are till condemned, diſolves your Attachment, by putting in Bail, to anſwer your Plaint, *&c.*

There is likewiſe, to ſave Charges, and for the eaſe of the Poorer ſort, eſtabliſhed in *London* a *Court of Equity*, vulgarly called the *Court of Conſcience*, which between Freeman and Freeman, takes Cognizance of anv ſumm under forty Shillings, and the Commiſſioners, who are ſubſtantial Citizens appointed by the Lord Mayor, *&c.* to inquire into petty differences ariſing between man and man, have power to ſtay any Sute begun in either of the Sheriffs-Courts, Mayor's-Court, *&c.* if the debt originally exceed not one Pound nineteen Shillings and eleven Pence, obliging the Plaintiff

upon Penalty of Five Pounds, according to the Statute made in the 1. of King *James* I. to bring it to a hearing before them; and in this Court the proceeding is by Summons, and the party to whom the Debt is owing, is believed upon his corporal Oath, unleſs the Commiſſioners knowing him to be very notorious, or by proof it ſo appear, will not ſuffer him to ſwear; and when the Debt is ſworn, if the Defendant pleads Poverty, time is awarded by the Court for the Payment of it by the Week or Month, at the dwelling houſe of the Plaintiff, or where he ſhall appoint; and upon failure Attachment is made out againſt him, to take him in Execution, and ſerved by an Officer for that purpoſe.

If the perſon that owes you Money be no Starter, it is uſual to enter an Action againſt him, and letting him know you have done ſo, require him to give in Bail to it, that ſo you may go to Tryal by conſent; but if he refuſe it, you muſt ſend an Officer to oblige him to it; and thus much briefly to give a light into what is to be done in getting in bad Debts, *&c.*

CHAP. XXVIII.

The methods obſerved in compounding Debts, and what ought to be obſerved therein, the way of proceeding upon a Commiſſion of Bankrupt, and what it is; together with the form of Writings, ſeaſonable on that Occaſion, &c.

IF a perſon abſent himſelf from his Buſineſs under a failure in the World, and will not appear to

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Negotiate with his Creditors for time or abatement, but does it by Proxy, appointing a place for the general meeting of the ſaid Creditors to hear propoſitions made to them, which are uſually theſe, *viz.* To pay ſo much in the Pound, which is called Compounding. To pay in Goods as they firſt coſt, or to give Security upon time. In this caſe the Creditors ought to conſider whether their Debtor is really neceſſitated to betake him to this ſhift, or whether he does it out of policy to ſhift himſelf of a bad Bargain or keep other Mens Moneys in his hands, *&c.* and accordingly to take their meaſures; for if the former, they ought to take the firſt offer, for ſeldom comes a better; a man continually loſing himſelf by being reſtrained from his buſineſs, and conſequently his Affairs muſt run to ruine; but if it be out of a Knaviſh deſign to defraud his Creditors and inrich himſelf, a practice too frequently uſed, there is a way to ferret him out of his ſecret abode, which is by taking out a ſtatute of Bankrupt againſt him, which in brief is this.

There is a Commiſſion obtained from under the Great Seal of *England*, nominating and directed to five or more perſons appointed Commiſſioners, impowring them to make a ſtrict and thorough inquiry into the parties Eſtate, and all the particulars attending or depending thereon, giving them ſufficient Authority to Adminiſter Oaths to any they ſuſpect to be conniving or confederate with him in concealing or carrying away any part of his Goods, or any thing appertaining to him; as alſo what monies are due from them to him upon account, or whatever they ſhall conceive convenient in the like nature, and may lawfully break open ſuch Houſe or Houſes, where they are ſufficiently informed ſuch Goods are conveyed and concealed, and may Impriſon ſuch as ſhall refuſe

to anſwer them any lawful queſtion, upon ſufficient ground ſo to do; and may not only ſell the Goods, but extend the Lands or Eſtate to the advantage and behoof of the Creditors, and cauſe a diſtribution of the monies ſo obtained, to be made amongſt thoſe that have paid their *quota* in defray of the Charges, allotting to each a dividend according to the ſumm he proves and makes out, be it more or leſs; and if it ſo happen, which is very ſeldom, that there be any Overplus, it muſt be returned to the firſt Proprietor, that is the Party that was Bankrupted.

Note that in taking out this Commiſſion, ſufficient Security muſt be given in to prove the Party a Bankrupt; nor is it taken out againſt any Man, unleſs one or more of the Creditors conſent and join, and the ſumms amount to upwards of 300 *l.*

As for the uſual Rates of Compoſition they are from five to fifteen Shillings in the Pound ready Money, or ſuch Security as the Creditor ſhall accept; and in this caſe it muſt be acknowledged as Satisfaction, and a Releaſe given in general diſcharge upon Payment, as if the whole had been paid, and fuller ſatisfaction made; the Copy of which, for the better readineſs, take as followeth.

The General Releaſe.

KNow all men by theſe Preſents, That I *William Grey*, Citizen and Grocer of *London*, have Remiſed, Releaſed, and quitted Claim, and by theſe Preſents do for me, my Heirs, Executors, Adminiſtrators and Aſſigns, Remiſe, Releaſe, and for ever quit Claim unto *Richard Waldrow* of *York* in the County of *York*, Merchant, his Heirs, Executors, Adminiſtrators and Aſſigns, all and all manner of Actions, Sutes, Cauſes and Accounts, Dealing and Dealings, Debts, Dues, Duties,

Duties, Reckonings, Summ and Summs of Money, Controverſies, Judgments, Extents, Executions and Demands whatſoever, which I the ſaid *William Grey* ever had, or which I, my Heirs, Executors, Adminiſtrators and Aſſigns, or any of us in time to come, can or may have to, for, or againſt the ſaid *Richard Waldrow*, his Heirs, Executors, Adminiſtrators or Aſſigns, for, or by any reaſon, matter, cauſe, or thing whatſoever, preceding the date hereof. *In witneſs whereof*, I have hereunto put my hand and ſeal the Fourteenth day of *December*, in the third year of the Reign of our Sovereign Lord King *James* the Second, of *England*, *Scotland*, &c. and in the year of our Lord God, 1687.

Signed, Sealed, and delivered in the preſence of *Will. Grey*

James Douſon,
Charon Dauxs.

And the like ſatisfaction muſt be acknowledged if you take Goods in full; but if you take part Goods or Money, and give time for the reſt, then the beſt way is to take a Bond for what remains, and give him a diſcharge in full, dated a day or more before the Bond; as for the form of the Bond it may be thus, &c. if ſingle.

The Form of a Latin Bond ſingle.

NOverint Univerſi per præſentes, me Richardum Waldrow Eboraci, in Comitatu Eboracenſi, Mercatorem, teneri & firmiter obligari Willielmo Grey Londini, Aromatico, in Centum Libris bonæ & Legalis Monetæ Angliæ ſolvend' eidem Willielmo Grey, aut ſuo certo Attornato, Executoribus, Adminiſtratoribus, vel Aſſignatis ſuis, ad quam quidem ſolutionem bene & fideliter faciendam obligo me, Hæredes, Executores, & Adminiſtratores meos firmiter per præſentes. Sigillo meo ſigillat' viceſſimo primo Decembris,

cembris, Anno Regni Regis noſtri Jacobi ſecundi, Dei Gratia, Magnæ Britanniæ, Franciæ & Hiberniæ Tertio, Annoque Dom. 1687.

THE Condition of this Obligation is ſuch, That if the above-bounden *Richard Waldrow*, his Heirs, Executors, Adminiſtrators or Aſſigns, ſhall well and truly pay or cauſe to be paid to the above-named *William Grey*, his Heirs, Executors, Adminiſtrators or Aſſigns, the full ſumm of Fifty Pounds of good and lawful Money of *England*, in and upon the Twenty firſt day of *December*, next inſuing the date hereof, without fraud or further delay, then this preſent Obligation to be void and of none effect, or elſe to ſtand and remain in full force and virtue.

Sigillat' & deliberat' in præſentia *Rich. Waldrow* (S)
Adam Edwards.

But finding your Debtor poor, and you yet account him honeſt as far as it is in his power, and you are willing to give him time for all his Debt, then taking a Bond for your better Evidence, you may ſign his Letter of Licence, for the form of which and other neceſſary forms of all manner of uſeful writings, by reaſon they would be too tedious in this book, I refer you to a ſmall book publiſhed by the Publiſher hereof, Intituled *The Young Secretary's Guide*, &c. and ſo leave the further management of this Affair to your diſcretion.

CHAP.

CHAP. XXIX.

An Account of the Market-Towns of England, &c. *and the Days on which the Markets are kept, for the Benefit of thoſe whoſe Trade lies much in the Country*, &c.

AT Lancaſter on Saturdays, at Garſtang in Lancaſhire on Tueſdays, at Burton in Weſtmoreland on Tueſdays, at Kendale in Weſtmoreland on Saturdays, at Penrith in Cumberland on Tueſdays, at Carliſle in Cumberland on Saturdays, at Stony-Stratford in Bucks on Frydays, at Northampton on Saturdays, at Mountſorrel in Leiceſterſhire on Mondays, at Leiceſter on Saturdays, at Harborough in Leiceſterſhire on Tueſdays, at Derby on Frydays, at Loughborrough on Thurſdays, at Coventry on Frydays, at Bremingham in Warwickſhire on Thurſdays, at Bridgnorth in Salop on Saturdays, at Warington in Lancaſhire on Wedneſdays, at Wiggan in Lancaſhire Mondays and Frydays, at Preſton in Lancaſhire Wedneſdays, Frydays and Saturdays, at Newcaſtle in Staffordſhire on Monday, at Beaumaris in Angleſea on Wedneſdays and Saturdays, at Barnet in Hartfordſhire on Monday, Hatfield on Thurſdays, at Stevenage on Frydays, at Hoddeſdon in Hartfordſhire on Thurſdays, at Buntingford on Saturdays, at Royſton on Wedneſday, at Huntington on Saturdays, at Caxſtone on Tueſdays, at Grantham on Saturdays, at Stamford on Mondays and Frydays, at Teuxford on Mondays, at Newark on Wedneſdays, at Doncaſter, Beautre and Sherbourn on Saturdays,

at Northallerton, Morpeth, Bury-St. Edmunds on Wedneſdays, at Borrough-bridge, Durham, Alnwick, Barwick, Cambridge, Ely, Swaſham and Peterborough on Saturdays, at Tedcaſter, Altenborough, Feckenham, Marketdeeping and Killingham on Thurſdays, at Darlington and Sleford on Mondays, at York on Thurſdays and Saturdays, at Newcaſtle Tueſdays and Saturdays, at Darlington on Mondays, at New-market on Tueſdays, at Downham on Saturdays, at Toxley on Tueſdays, at Lincoln on Fridays, at Barton on Tueſdays, at Hull Tueſdays and Saturdays, at Beverley Wedneſdays and Frydays, at Killingham on Thurſdays, at Burlington on Saturdays, at Rumford in Eſſex on Wedneſdays, at Burntwood and Saxmundiſham on Thurſdays, at Chelmsford on Frydays, at Colcheſter on Saturdays, at Ipſwich Wedneſdays, Frydays and Saturdays, at Beckles and Yarmouth on Saturdays, at Maning-tree and Harwich on Tueſdays, at Dartford and Seven Okes on Saturdays, at Sandwich and Canterbury Wedneſdays and Saturdays, at Rocheſter on Frydays, at Bromly in Kent on Thurſdays, at Rye Wedneſdays and Saturdays, at Maidſtone on Thurſdays, at Aſford, and Heith on Saturdays, at Darkin in Surrey on Thurſdays, at Arundel on Wedneſdays and Saturdays, at Kingſton on Thames, Guilford and Peterfield on Saturdays, at Portſmouth Thurſdays and Saturdays, at Chicheſter Wedneſdays and Saturdays, at New-Brentford on Tueſdays, at Stanes on Frydays, at Baſingſtoke on Wedneſdays, at Andover on Saturdays, at Salisbury on Tueſdays and Saturdays, at Shaftsbury, Hinton and Axminſter on Saturdays, at Exeter on Wedneſdays and Frydays, at Plymouth on Mondays and Thurſdays, at Tregony, Alton, Ruley, Low and Foy on Saturdays, at Market-Jew, Penſance, Alersford and Farnham on Thurſdays,

Thurſdays, at Wincheſter Wedneſdays and Saturdays, at Pool Mondays and Thurſdays, a, Southampton Tueſdays and Frydays, at Dorcheſter Warminſter, Watchet, Marleborough, Reading and Chipnam on Saturdays, at Colebrook, Maidenhead and Cranborne on Wedneſdays, at Bridgwater, Newbery and Henly on Thurſdays, at Briſtol Wedneſdays and Saturdays, at Abington Mondays and Frydays, at Faringdon, Letchlad, Cowbridge, Llanelly and Kidwelly on Tueſdays, at Gloceſter Wells and Bathe on Wedneſdays and Saturdays, at Hereford on Wedneſdays and Frydays, at Roſs, the Devizes and Fairford on Thurſdays, at Monmouth and Newport on Saturdays, at Haverford Wedneſdays, Thurſdays and Saturdays, at Swanſey, Carmarthen and Brecknock, Wedneſdays and Saturdays, Uxbridge, Beconsfield, Montgomery and Wandover on Thurſdays, at Oxford on Wedneſdays and Saturdays, at high Wickham on Frydays, at Woodſtock, Perſhor and Tenbury on Tueſdays, at Worceſter Wedneſdays, Frydays and Saturdays, at Ludlow and Broomyard on Mondays, at Buckingham on Saturdays, at Biſhops-Caſtle on Frydays, at Barnet on Mondays, at St. Albans on Saturdays, at Dunſtable and Daventree on Wedneſdays, at Litchfield Tueſdays and Frydays, at Cheſter Wedneſdays and Saturdays, at Denbigh on Wedneſdays, at Albertonway on Frydays.

Thus, Reader, you have an account of the Market-Towns, and the Days thoſe Markets are held on throughout *England* and *Wales*, from whence I proceed to give an Account of the Fairs, eſpecially thoſe that ſtand fajreſt in the way of Trade.

CHAP. XXX.

An Account of the Fairs held yearly in England *and* Wales, *with the Names of the Places where they are kept, the Days, and their Continuance.*

The Fairs in January *are held,*

THE Fifth day at Hicketford in Lancaſhire; the 6 at Salisbury, and the Thurſday following at Banbury; 25 at Graveſend, Churchingford, Briſtol, Northallerton.

The Fairs held in February *are,*

The Firſt day at Bromly in Lancaſhire; the 2 at Maidſtone, Bickleſworth, Reading, Becklesfield, Linn, Bath, Bugwort; the 3 at Brogrove, and on Valent-day at Feverſham, Owndle in Northampt. on the 24 at Baldock, Henly upon Thames, and on Aſh-wedneſday at Dunſtable, Eaton, Royſton, Tunbridg, Tamworth, Exceter, Litchfield, Cirenceſter, and the firſt day of Lent at Banbury.

The Fairs held in March *are,*

The 3 day at Bromwell-Brakes in Norfolk; the 4 at Bedford; the 12 at Alſome in Norfolk, Woobourn, Sudbury; the 13 at Bodmin in Cornwal, Wye; the 20 at Durham, and the Monday before Lady-day at Wisbich and Kendale; the 25 at Northampton, Huntington, Malding, Aſhwell in Hartfordſhire, Newcaſtle; and at Mid-lent at Saffron-walden in Eſſex; on Good-friday at Norwich; on Palm-ſunday Eve at Pomfret, Wisbich, Worceſter.

The Fairs held in April *are,*

Upon Eaſter-Monday at Oney in Bedfordſhire, and at Gainsborough; on Eaſter-tueſday at Godmancheſter,

manchester, at Daintree in Northamptonshire, at Schole in Norfolk, and at St. Edmundsbury; on Easter-wednesday at Wellingborough in Northamptonshire; the Fryday following at Darby; Saturday at Bickleſworth; the 2 at Rochford, Hitchin and Northfleet; the 7 at Darby; the 9 at Bickleſworth and Billingſworth; the 22 at Stabford; 23 at Harbin, Northampton and Ipſwich, Spaſſer in Hartfordſhire, Charing, Hinningham, Tamworth, Bury in Lancaſhire, St. Bombs in Cornwal; the 27 at Okam in Rutlandſhire, Dunmow in Eſſex, Buckingham and Darby; the 29 at Tenderden in Kent, Pleet, &c. the 30 at *Beverly*, continuing the Space of 6 days.

The Fairs held in May *are*,

The firſt day at Layton-buzzard in Huntingtonſhire, Hannel in Eſſex, Rippon in Yorkſhire, Maidſtone, Reading, Teuxford in the Clay; the 3 at Non-Eaton in Warwickſhire, Elſtow in *Bed*fordſhire, Chelmsford in Eſſex, Thetford in Norfolk, Waltham-Abby, Rochdale, Hinningham and *Bromyard*; the 7 at Newton in Lancaſhire, Oxford and *Beverly*; the 10 at Dunſtable, Rocheſter, Mayfield in Suffolk, and on Rogation-Sunday at Reach; on Aſcention-day at *Beverley*, Rippon, Thaxted, Sudminſter, *Biſhops*-ſtratford, Wickham in Lancaſhire, St. Edes, Middlewich in Cheſhire, Chappel-frith in Derbyſhire; on Whitſon-Eve at Skipton in Craven, on Whitſon Monday at St. Ives, *Bickleſworth*, Rygate in Surry, *Bedford*, Augmundiſham; on Whitſon-Tueſday at Newmarket; on Wedneſday at Royſton; on Thurſday at Odehil in Northamptonſhire, the 26 at Lenham; the 29 at Crainbrook.

The Fairs held in June *are*,

On Trinity-Eve at Kendale and Rowel; on Corpus Chriſti at *Banbury*, Newbury, St. Edes, *Biſhops*-Stafford, Coventry; the 9 at Maidſtone;

the

the 11 at *B*reme in Norfolk, *B*radfield in Eſſex; the 17 at Hadſtock; the 23 at Deerham, Shrewsbury, St. Albans; the 24 at *B*arnwell beſide Cambridge, Halſon in Suffolk, *B*edford, Colcheſter, Rumford, Reading, Windſor, Hardford, *B*everly, Halifax, Haſelinden; the 26 at Darby, *B*riſtol; the 27 at Folſtone and *B*urton upon Trent; the 28 at S. Pombs in Cornwal; the 29 at Peterborow, Sudbury, Aſhwell, Stebbing in Eſſex, *B*enington in Hartfordſhire.

The Fairs held in July *are*,

The firſt, ſecond and third days at Congleſtone in Cheſhire; the 7 at *B*urntwood and Royſtone; the Munday following at Foringham; the 11 a Fair at Portney for Horſes only; the 20 at Uxbridge, Coolidge, Woodſtock and *B*arkway; the 22 at Icleton, *B*ickleſworth, Norwich, Colcheſter; the 25 at Reading and Audly-End beſide Walden.

The Fairs held in Auguſt *are*,

The firſt day at S. Eeds, Dunſtable, Bedford, Feverſham, Bickleſworth, Wisbich and Stony-ſtratford; the 10 at Harpley in Norfolk, Thaxted in Eſſex, Blackmore, *B*edford, S. Ives, *B*anbury, Farnham, *B*ranford; the 15 at Cambridge, Huntington, Dunmore, Luton, Northampton; the 24 at Sudbury, London, Oxford, Norwich, Northallerton, *B*eggar-sbuſh, Dover, *B*urton; the 29 at Harlow-buſh in Eſſex, Halſon in Suffolk, Watford.

The Fairs held in September *are*,

The firſt at St. Giles in the buſh; before the 8 day on Thurſday and Friday at Sandbich in Cheſhire; the 7, 8, 9 and 10 at Woodbury-Hill in Dorſetſhire; the 7 at Ware; the 8 at Huntington, Portney, *B*ury in Lancaſhire, Northampton, Wakefield, Southwark, Sturbridge; the 14 at Rippon for Horſes, Chefterfield, Waltham-Abbey, Rich-

Richmond; the 21 at Bedford, Baldro, Marleborow, St. Edmundbury, Holden, Braintree, Bracklymaiden and Malden; the 29 at St. Ives, Market-Deeping, Baſingſtoke, Shelford, Malden for Horſes, Biſhops-ſtratford, Stow in Lincolnſhire; and the Thurſday after at Banbury.

The Fairs held in October *are,*

The ſecond day at Salisbury; the 6 at Maidſtone, Coolidge, Havent in Hampſhire, Gayworth by Lynn, St. Faiths; the 8 at Harborough and Biſhops-ſtratford; the 9 at Gainsborough in Lincolnſhire; the 13 at Colcheſter, Windſor, Graveſend; the 18 at Biſhops-Hatfield, Ely, Charleton, Banbury, Barnet, Thirſt, Burton on Trent; the 12 at Saffron-Walden; the 23 at Bickleſworth; the 28 at Dis in Norfolk, New-Market, Wakefield, Richdrel in Lancaſhire.

The Fairs held in November *are,*

At Chelmsford the firſt day; the 2 at Epping, Kingſton upon Thames, Padamhaſſon in Suffolk; the 6 at Newport-pond, Bedford, Hartford; the 11 at Loddon in Norfolk, Fockingham in Northamptonſhire, Marleborough; the 17 at Harlow, Lincoln, Hide, Northampton, Spalding in Lincolnſhire; the 19 at Horſham in Suſſex; the 20 at St. Edmundsbury-Heath, Ingerſtone in Eſſex; the 23 at Sandwich; the 30 at Bareford, Baldock, Maidenhead, Knowlingborough, Rocheſter and Warrington.

The Fairs held in December *are,*

The fifth day at Puckley; the 6 at St. Eedes, Woodſtock, Norwich, Spalding, Exeter, Seven-Oakes, Arundel, Grantham; the 7 at Sandhurſt; the 8 at Northampton, Huntington, Clitherel in Lancaſhire, Malpas in Cheſhire; the 29 at Salisbury and Canterbury.

Note that the Fairs fixed to days with no certain date, are called Moveable Fairs; and although they

they are placed in particular months, yet as *Easter* and *Whitsontide*, or the days to which they are affixed fall high or low, so they move equally with them, &c.

CHAP. XXXI.

Distances of Places discovered, or the computation of Miles, with the Roads leading from place to place, very advantageous for such as Travel upon any Occasion, &c.

FRom London to Cambridge 44 miles; *viz.* from London to Waltham 12, from thence to Ware 8, thence to Puckridge 5, thence to *B*arkway 7, thence to Fulmire 6, and thence to Cambridge 6.

From London to Oxford 47 miles; *viz.* from London to Uxbridge 15, from thence to *B*eckonsfield 7, from thence to Wickam 5, from thence to Stoken-Church 5, thence to Tetsworth 5, thence to Wheatly-Bride 5, thence to Oxford 5.

From Coventry to Oxford 44 miles; *viz.* from Coventry to Southamp. 14, thence to Banbury 10, thence to Woodstock 14, thence to Oxford 6.

From Oxford to Cambridge 52 miles; *viz.* from Oxford to Bisciter 10, thence to Buckingham 9, thence to Newport 8, thence to Bedford 7, thence to Gamlinghay 9, thence to Cambrige 9.

From Coventry to Cambridge 48 miles; *viz.* from Coventry to Dunchurch 8, thence to Northampton 10, thence to Higham-Ferries 10, thence to St. Eedes 8, thence to Cambridge 12.

From Bristol to Oxford 48 miles; *viz.* from Briftol to Sadbury 10, thence to Chichester 12, thence

thence to Farrington 14, thence to Oxford 12.

From York to Barwick 108 miles; *viz.* from York to Topcliffe 17, from thence to Northallerton 7, thence to Darrington 10, thence to Durham 14, thence to Huntington 15, thence to Newcaſtle 12, thence to Morpit 12, thence to Anwick 12, thence to Belford 12, thence to Barwick 12.

From London to York 151 miles; *viz.* from London to Waltham 12, thence to Ware 8, thence to Royſton 14, thence to Huntington 15, thence to Stilton 9, thence to Stamford 12, thence to Grantham 16, thence to Newark 10, thence to Tuxford 10, thence to Doncaſter 18, thence to Wentbridge 7, thence to Tedcaſter 12, thence to York 8.

From London to Norwich 95 miles; *viz.* from London to Barkway 32, thence to Whitford-bridge 10, thence to Newmarket 12, thence to Icklingham-ſands 10, thence to Thetford 6, thence to Attleborough 10, thence to Windham 10, thence to Norwich 5.

From London to Walſingham 86 miles; *viz.* from London to Ware 20, thence to Newmarket 34, thence to Brandon-ferry 10, thence to Pickham 10, thence to Walſingham 12.

From London to Yarmouth 92 miles; *viz.* from London to Rumford 10, thence to Burntwood 5, thence to Ingerſtone 5, thence to Chelmsford 5, thence to Kelvedon 10, thence to Colcheſter 8, thence to Ipſwich 12, thence to Woodbridge 7, thence to Snapbridge 6, thence to Blibur 8, thence to Leaſtaffe 10, thence to Yarmouth 6.

From London to Lincoln 99 miles; *viz.* from London to Stilton 58, thence to Gunworth-ferry 4, thence to Weſt-deeping 5, thence to Bourn 5, thence to Sleeford 13, thence to Lincoln 14.

From

From London to Boſton 94 miles; *viz.* from London to Stilton 58, thence to Gunworth-ferry 4, thence to Weſt-deeping 5, thence to Bourn 5, thence to Boſton 22.

From London to Nottingham 94 miles; *viz.* from London to Barnet 10, thence to S. Albans 10, thence to Dunſtable 10, thence to Brick-hill 7, thence to Stony-Stratford 7, thence to Northampton 10, thence to Harborough 12, thence to Loughborough 8, thence to Nottingham 8.

From London to Coventry 74 miles; *viz.* from London to Stony-Stratford 44, thence to Toceter 6, thence to Daventry 10, thence to Coventry 14.

From London to Lancaſter 180 miles; *viz.* from London to Coventry 74, thence to Lichfield 20, thence to Newcaſtle 20, thence to Wiggan 12, thence to Preſton 14, thence to Lancaſter 20.

From London to Ludlow 106 miles; *viz.* from London to Wickham 27, thence to Iſlip 20, thence to Chippingnorton 12, thence to Eveſham 14, thence to Worceſter 12, thence to Tenbury 16, thence to Ludlow 5.

From London to Briſtol 97 miles; *viz.* from London to Colebrook 15, thence to Maidenhead 7, thence to Reading 7, thence to Newbury 12, thence to Hungerford 8, thence to Marleborough 13, thence to Chipnam 15, thence to Maxfield 10, thence to Briſtol 10.

From London to Exeter 130 miles; *viz.* from London to Stanes 15, thence to Bagſhot 8, thence to Hartlerow 8, thence to Andover 16, thence to Salisbury 15, thence to Shaftsbury 18, thence to Sherbone 12, thence to Crookhorne 10, thence to Chard 6, thence to Hunniton 10, thence to Exeter 12.

From

From London to Dover 55 miles; *viz.* from London to Dartford 12, thence to Graveſend 6, thence to Rocheſter 5, thence to Sittingbourn 8, thence to Canterbury 12, thence to Dover 12.

Note that an *Engliſh* meaſured Mile conſiſts of 8 Furlongs, or 1760 Yards, *&c.* but computed Miles are uncertain.

A Table

A Table directing how to buy and sell by the Hundred.

A Table directing how to buy and sell Commodities by the Hundred, and to know by the Pound what the Hundred cost, &c.

d.	q.	l.	s.	d.	d.	q.	l.	s.	d.
0	1	0	2	4	9	1	4	6	4
0	2	0	4	8	0	2	4	8	8
0	3	0	7	0	0	3	4	11	0
1	0	0	9	4	10	0	4	13	4
0	1	0	11	8	0	1	4	15	8
0	2	0	14	0	0	2	4	18	0
0	3	0	16	4	0	3	5	0	4
2	0	0	18	8	11	0	5	2	8
0	1	1	1	0	0	1	5	5	0
0	2	1	3	4	0	2	5	7	4
0	3	1	5	8	0	3	5	9	8
3	0	1	8	0	12	0	5	12	0
0	1	1	10	4	0	1	5	14	4
0	2	1	12	8	0	2	5	16	8
0	3	1	15	0	0	3	5	19	0
4	0	1	17	4	13	0	6	1	4
0	1	1	19	8	0	1	6	3	8
0	2	2	2	0	0	2	6	6	0
0	3	2	4	4	0	3	6	8	4
5	0	2	6	8	14	0	6	10	8
0	1	2	9	0	0	1	6	13	0
0	2	2	11	4	0	2	6	15	4
0	3	2	13	8	0	3	6	17	8
6	0	2	16	0	15	0	7	0	0
0	1	3	18	4	0	1	7	2	4
0	2	3	0	8	0	2	7	4	8
0	3	3	3	0	0	3	7	7	0
7	0	3	5	4	16	0	7	9	4
0	1	3	7	8	0	1	7	11	8
0	2	3	10	0	0	2	7	14	0
0	3	3	12	4	0	3	7	16	4
8	0	3	14	8	17	0	7	18	8
0	1	3	17	0	0	1	8	1	0
0	2	3	19	4	0	2	8	3	4
0	3	4	1	8	0	3	8	5	8
9	0	4	4	0	18	0	8	8	0

Underſtand this Table thus, viz.

IF you buy any thing by the long Hundred, accounting 112 Pounds to the Hundred, and would know by the Pound what the Hundred is valued at, obſerve the following Directions.

Example. If you buy any Goods at 4 Pence 3 Farthings the Pound, look in the Table for 4 Pence 3 Farthings in the firſt Column, and againſt it in the ſecond you will find 2 Pounds 4 Shillings and 4 Pence, and ſo much at that rate 112 Pounds comes to.

If 112 Pounds weight coſt 4 pounds 1 ſhilling 8 pence, to know how much it is by the pound look for 4 pounds 1 ſhilling 8 pence in the ſecond Column of the Table, and right againſt it in the firſt Column you ſhall find 8 pence 3 farthings, and ſo much at that rate it comes to by the pound.

Again; If you buy one hundred Weight of Goods for 4 pounds 1 ſhilling 8 pence, and retail it at 10 pence the pound, it coming at that rate to 4 pounds 13 ſhillings 4 pence, taking 4 pounds 1 ſhilling 8 pence from it and you will find your ſelf by the remainder 11 ſhillings 8 pence gainer; And in this manner may you with much eaſe calculate and conſider any Quantity according to the true Value contained in this Table.

A Table of Expences and Wages, to know by the Week, Month, Year, &c. what ſmall Summs amount to; whereby a Perſon may regulate his Affairs accordingly.

		Week.			Month.			Year.		
		l.	ſh.	d.	l.	ſh.	d.	l.	ſh.	d.
Pence.	1	0	0	7	0	2	4	1	10	5
	2	0	1	2	0	4	8	3	0	10
	3	0	1	9	0	7	0	4	1	3
	4	0	2	4	0	9	4	6	1	8
	5	0	2	11	0	11	8	7	12	1
	6	0	3	6	0	14	0	9	2	6
	7	0	4	1	0	16	4	10	12	1
	8	0	4	8	0	18	8	12	3	4
	9	0	5	3	1	1	0	2	13	9
	10	0	5	10	1	3	4	15	4	2
	11	0	6	5	1	5	8	16	14	0
Shillings.	1	0	7	0	1	8	0	18	5	0
	2	0	14	0	2	16	0	36	10	0
	3	1	1	0	4	4	0	54	15	0
	4	1	8	0	5	12	0	73	0	0
	5	1	15	0	7	0	0	91	5	0
	6	2	2	0	8	8	0	109	10	0
	7	2	9	0	9	16	0	127	15	0
	8	2	12	0	11	4	0	146	0	0
	9	3	3	0	12	12	0	164	5	0
	10	3	10	0	14	0	0	182	10	0
	11	3	17	0	15	8	0	200	15	0
	12	4	4	0	16	16	0	219	0	0
	13	4	11	0	18	4	0	239	5	0
	14	4	18	0	19	12	0	255	10	0
	15	5	5	0	21	0	0	273	15	0
	16	5	11	0	22	8	0	292	0	0
	17	5	19	0	23	16	0	310	5	0
	18	5	6	0	25	4	0	328	10	0
	19	6	13	0	26	12	0	336	15	0
	20	7	0	0	28	0	0	365	0	0

The uſe of the Table.

TO underſtand this Table, obſerve the Pence and the Shillings in the firſt Column, and what ſtands in the even row againſt them under the Weeks, Months and Years, ſo much amounts the Expence to; as for Example, one Penny a day is ſeven Pence *per* Week, two ſhillings four pence *per* Month, and one pound ten ſhillings five pence by the Year, as in the firſt regular Line of Figures in the Table; and ſo ſucceſſively of the reſt downward, as far as the Pence go, *viz.* to eleven, and then the Shillings begin, being divided from the Pence by a croſs Line, and noted in the Margin of the Table; as for Example, one Shilling the day is 7 ſhillings the Week, one pound eight ſhillings the Month, and eighteen pound five ſhillings the Year, as noted in the firſt regular row of Figures 1 for Shillings, and ſo of the reſt in their order. But further note in theſe Tables of Expence that no more than four bare Weeks or twenty eight days are allowed to the Month, though the Reader knowing them, may eaſily calculate the overplus.

An

An easy Table of Interest to know the Interest of any Summ to a 1000 *l.* for 1. 3. 6. 9. or 12. Months, *&c.*

Pounds	1 Mon.			3 Mon.			6 Mon.			9 Mon.			A Year		
	s.	*d.*	*q.*	*s.*	*d.*	*q.*	*s.*	*d.*	*q.*	*s.*	*d.*	*q.*	*s.*	*d.*	*q.*
5	0	0	1	0	0	3	0	1	3	0	2	1	0	3	2
10	0	0	2	0	1	3	0	3	2	0	5	2	0	7	1
15	0	0	3	0	2	2	0	5	0	0	8	0	0	10	2
1	0	1	0	0	3	2	0	7	0	0	10	1	1	2	0
2	0	2	1	0	7	0	1	2	1	1	9	1	2	4	2
3	0	3	2	0	10	2	1	9	1	1	7	3	3	6	3
4	0	4	3	1	2	1	2	4	2	2	6	3	4	9	0
5	0	6	0	1	6	0	3	0	0	4	6	0	6	0	0
6	0	7	0	1	9	2	3	7	0	5	4	2	7	2	1
7	0	8	1	2	1	0	4	2	1	6	3	1	8	4	2
8	0	9	2	2	4	2	4	9	1	7	1	2	9	6	3
9	0	10	3	2	8	1	5	4	2	8	0	3	10	0	0
Tens of Pounds	*l.*	*s.*	*d.*	*l.*	*s.*	*d.*	*l.*	*s.*	*d.*	*l.*	*s.*	*d.*	*l.*	*s.*	*d.*
10	0	1	0	0	3	0	0	6	0	0	9	0	0	12	0
20	0	2	0	0	6	0	0	12	0	0	18	0	1	4	0
30	0	3	0	0	9	0	0	18	0	1	7	0	1	16	0
40	0	4	0	0	12	0	1	4	0	1	16	0	2	18	0
50	0	5	0	0	15	0	1	10	0	2	5	0	3	0	0
60	0	6	0	0	18	0	1	16	0	2	13	0	3	12	0
70	0	7	0	1	1	0	2	2	0	3	3	0	4	4	0
80	0	8	0	1	4	0	2	8	0	3	12	0	4	16	0
90	0	9	0	1	9	0	2	14	0	4	0	1	5	18	0
100	0	10	0	1	10	0	3	0	0	4	10	0	6	0	0
500	2	10	0	7	10	0	15	0	0	22	10	0	30	0	0
1000	5	0	0	15	0	0	30	0	0	45	0	0	60	0	0

The uſe of this Table.

AS for knowing the uſe of this Table, conſidering the Intereſt at 6 *per Cent.* take notice what the figures in the firſt Column ſtand for, as marked in the Margin, then of the Month or Months you inquire after, under which are the reſpective Intereſt of the various ſumms; as for Example, 1 Pound, the Intereſt comes to a Penny the Month or ſomewhat more, but ſo little as not to be divided; 3 Months to 3 *d.* ½. ſix Months to 7 *d.* nine Months to 10 *d.* ¼. or ſomewhat more; nine Months to 1 *s.* 2 *d.* and the better part of a Farthing, though rarely reckoned for, unleſs in great ſumms, as you will find it in the firſt regular Line of the Pounds marked in the Margin, *&c.* and ſo proceed to inform your ſelf in any other ſumm, greater or leſſer as the Table will direct you, by the Months, Pounds, Shillings and Pence over head, and in the Margin.

An eaſy Table for the ſpeedy Reduction of Pounds at firſt Sight into Shillings, Pence and Farthings.

Pounds	Shillings	Pence	Farthings
1	20	240	960
2	40	480	1920
3	60	720	2880
4	80	960	3840
5	100	1200	4800
6	120	1440	5760
7	140	1680	6720
8	160	1920	7680
9	180	2160	8640
10	200	2400	9600

The better to underſtand this Table, obſerve the Figures under Pounds, Shillings, Pence and Farthings, and taking them in the even Row, you have your Deſire: As for Example, 1 Pound in the Firſt Column makes 20 Shillings in the Second, 240 Pence in the Third, and 960 Farthings in the Fourth, and ſo of the reſt in order.

Neceſſary

CHAP. XXIII.

Neceſſary and eaſy Tables for the more ſpeedy Computation of Weights and Meaſures, by which at firſt Sight the greater may be known by the leſſer, or the leſſer by the greater, without the trouble of caſting up, &c.

Tables of *Troy* Weight in two Natures, *viz.*

For Goldſmiths, &c.

			Grains
		Penny-weight	24
	Ounces	20	480
Pounds	12	240	5760

For Apothecaries, &c.

				Grains
			Scruples	20
		Drams	3	60
	Ounces	8	24	480
Pound	12	96	288	5760

A Table of Averdupois *Weight adjusted by Drams, Ounces, Pounds, Quarters, Hundreds, Tuns*, &c.

				Drams
			Ounces	16
		Pounds	16	256
	Quarters	28	440	7168
Hundreds	4	112	1792	28672
Tun 20	80	2240	35840	573440

Tables adjusting Ale and Beer Measures, commonly called wet Measures, &c.

Ale Measure.

						Pints
					Quarts	2
				Pottles	2	4
			Gallons	2	4	8
		Firkins	8	16	32	64
	Kilderkins	2	16	32	64	128
Barrels	2	4	32	64	128	256

Beer

Beer Measure

	Pints				
Quarts	2				
Pottles	2	4			
Gallons	2	4	8		
Firkins	9	18	36	72	
Kilderkins	2	18	36	72	144
Barrels	2	4	36	72	144	288

Wine Measure.

	Gallons		
Hogshead	63		
Pipe or Butt	2	126	
Tun	2	4	252

A Table of Dry Measure adjusted, &c. Or Measures for Salt, Corn, and the like.

	Pints					
Qarts	2					
Pottles	2	4				
Gallons	2	4	8			
Pecks	2	4	8	16		
Bushels	4	8	16	32	64	
Quarters	8	32	64	128	256	512
Weighs	5	40	160	320	640	1280	2560
Last	2	10	80	320	540	1280	2560	5120

A Table adjusting Measures of Length, &c.

				Inches
			Feet	12
		Yards	3	36
	Poles	$5\frac{1}{2}$	$16\frac{1}{2}$	198
Furlongs	40	220	660	7920
Miles	8	320	1760	5280	63360

In this Table you are directed to know how many Inches make a Foot, how many Feet a Yard, how many Yards a Pole, how many Poles a Furlong, and how many Furlongs a Mile, and consequently how many Inches, Feet, *&c.* go to a Mile, as in the Order you may perceive.

A Table of superficial or square Measure adjusted.

					Feet
				Yards	9
			Poles	$30\frac{1}{4}$	$272\frac{1}{4}$
		Roods	40	1210	1890
	Acres	4	160	4840	43560
Miles	640	2560	102400	3097600	27878400

Note that in this Table you have the square Mile accounted, 640 square Acres 2560 square Roods, *&c.* And in the square Pole is found $30\frac{1}{4}$ square Yards, and so of the rest: Of which I shall speak more at large when I come to the measuring Part of this Book.

A ſhort Direction to know the Day of the Month for ever.

Apr. July	Sept. Dec.	June Febr.	Mar. Nov.	Aug.	May Jan.	Oct.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	∞	∞	∞	∞

Obſerve that on whatſoever Day of the Week beginneth the Year, the Figure under each Month denotes the ſame Day, till the Year is ended. As thus, Suppoſe the 25*th.* of *March* reckoned the beginning of the Year as to dating, *&c.* ſhould happen on a *Tueſday* accounted the Third day of the Week, then look under *September* and *December* and there you will find the Figure of 2 denoting *Tueſday* and ſignifying it to be the Second Day of either of thoſe Months, and ſo in like manner look to the reſt of the Months, and you will accordingly find the Days fall out exact, *&c.*

The Moon's Age.		London, Whitebay, Tinmouth.		Bridlington-bay, Berwick.		Quar. Tid. Severn, Scarbor.		Falmouth, New-Caſt Dartm.	
Days		H.	M	H.	M.	H.	M.	H.	M.
1	16	3	48	4	31	5	18	6	3
2	17	4	30	5	21	6	6	6	51
3	18	5	24	6	9	6	54	7	39
4	19	6	12	6	57	7	42	8	27
5	20	7	0	7	45	8	30	9	15
6	21	7	48	8	33	9	18	10	3
7	22	8	36	9	21	10	6	10	51
8	23	9	24	10	9	10	54	11	39
9	24	10	12	10	57	11	42	12	27
10	25	11	0	11	45	12	30	1	15
11	26	11	48	12	33	1	10	2	3
12	27	12	36	1	21	2	6	2	51
13	28	1	24	2	9	2	54	3	39
14	29	2	12	2	57	3	42	4	27
15	30	3	0	3	45	4	30	5	15

The Moon's Age.		Southam. Queenbo. Porrſm.		Weſt-End of Nower, Rocheſter.		Blackneſs, Graveſend the Downs		Bell-Iſl. S. Andrews Dundee.	
Days		H.	M.	H.	M.	H.	M.	H.	M.
1	16	12	48	1	33	2	18	3	3
2	17	1	36	2	21	3	6	3	51
3	18	2	24	3	9	3	54	4	39
4	19	3	12	3	57	4	42	5	27
5	20	4	0	4	45	5	30	6	15
6	21	4	48	5	33	6	18	7	3
7	22	5	36	6	21	7	6	7	51
8	23	6	24	7	9	7	54	8	39
9	24	7	12	7	57	8	42	9	27
10	25	8	0	8	45	9	30	10	15
11	26	8	48	9	33	10	18	11	3
12	27	9	36	10	21	11	6	11	51
13	28	10	24	11	9	11	54	12	39
14	29	11	12	11	57	12	42	1	27
15	30	12	0	12	45	1	30	2	15

The Tide-Table explain'd.

Note that the Moons Age being taken Notice of by the Rule mentioned in the foregoing Page, you find her 8 days old in the firſt Column marked 8, over-againſt it in the ſecond Column you will find 9 24, ſo that that day it is High-water at any of the Places mentioned above in the Column at 24 Minutes paſt 9 of the Clock, and in the ſame order proceed to the reſt, H ſtanding for Hours, and M for Minutes.

A very uſeful Table, declaring what Years of Purchace a Leaſe or Annuitie is worth immediately, upon Intereſt at 6 per Cent; *alſo directing to diſcount any Leaſe in being, and the juſt Value of Reverſion, after a ſet or fixed number of Years.*

Years Leaſe	Years	Months	Parts	Years Leaſe	Years	Months	Parts
1	0	11	0	17	10	5	8
2	1	9	9	18	10	9	9
3	2	8	1	19	11	1	3
4	3	5	9	20	11	5	7
5	4	2	5	21	11	9	3
6	4	11	0	22	12	0	5
7	5	7	0	23	12	3	6
8	6	2	5	24	12	6	6
9	6	9	6	25	12	9	4
10	7	4	3	26	3	0	0
11	7	10	7	27	3	2	5
12	8	4	6	28	3	4	9
13	8	10	3	29	13	7	1
14	9	3	6	30	13	9	2
15	9	8	5	31	13	11	1
16	10	11	3	32	14	11	0

The Moon's Age. Days		London, Whitebay, Tinmouth. H.	M	Bridlington-bay, Berwick. H.	M.	Quar. Tid. Severn, Scarbor. H.	M.	Falmouth, New-Cast Dartm. H.	M.
1	16	3	48	4	31	5	18	6	3
2	17	4	30	5	21	6	6	6	51
3	18	5	24	6	9	6	54	7	39
4	19	6	12	6	57	7	42	8	27
5	20	7	0	7	45	8	30	9	15
6	21	7	48	8	33	9	18	10	3
7	22	8	36	9	21	10	6	10	51
8	23	9	24	10	9	10	54	11	39
9	24	10	12	10	57	11	42	12	27
10	25	11	0	11	45	12	30	1	15
11	26	11	48	12	33	1	10	2	3
12	27	12	36	1	21	2	6	2	51
13	28	1	24	2	9	2	54	3	39
14	29	2	12	2	57	3	42	4	27
15	30	3	0	3	45	4	30	5	15

The Moon's Age. Days		Southam. Queenbo. Porrsm. H.	M.	West-End of Nower, Rochester. H.	M.	Blackness, Gravesend the Downs H.	M.	Bell-Isl. S. Andrews Dundee. H.	M.
1	16	12	48	1	33	2	18	3	3
2	17	1	36	2	21	3	6	3	51
3	18	2	24	3	9	3	54	4	39
4	19	3	12	3	57	4	42	5	27
5	20	4	0	4	45	5	30	6	15
6	21	4	48	5	33	6	18	7	3
7	22	5	36	6	21	7	6	7	51
8	23	6	24	7	9	7	54	8	39
9	24	7	12	7	57	8	42	9	27
10	25	8	0	8	45	9	30	10	15
11	26	8	48	9	33	10	18	11	3
12	27	9	36	10	21	11	6	11	51
13	28	10	24	11	9	11	54	12	39
14	29	11	12	11	57	12	42	1	27
15	30	12	0	12	45	1	30	2	15

The Tide-Table explain'd.

Note that the Moons Age being taken Notice of by the Rule mentioned in the foregoing Page, you find her 8 days old in the first Column marked 8, over-against it in the second Column you will find 9 24, so that that day it is High-water at any of the Places mentioned above in the Column at 24 Minutes past 9 of the Clock, and in the same order proceed to the rest, H standing for Hours, and M for Minutes.

A very useful Table, declaring what Years of Purchace a Lease or Annuitie is worth immediately, upon Interest at 6 per Cent; *also directing to discount any Lease in being, and the just Value of Reversion, after a set or fixed number of Years.*

Years Lease	Years	Months	Parts	Years Lease	Years	Months	Parts
1	0	11	0	17	10	5	8
2	1	9	9	18	10	9	9
3	2	8	1	19	11	1	3
4	3	5	9	20	11	5	7
5	4	2	5	21	11	9	3
6	4	11	0	22	12	0	5
7	5	7	0	23	12	3	6
8	6	2	5	24	12	6	6
9	6	9	6	25	12	9	4
10	7	4	3	26	3	0	0
11	7	10	7	27	3	2	5
12	8	4	6	28	3	4	9
13	8	10	3	29	13	7	1
14	9	3	6	30	13	9	2
15	9	8	5	31	13	11	1
16	10	11	3	32	14	11	0

The Explanation of the foregoing Table.

PUT caſe that a Leaſe is to continue 10 years and you are deſirous to be informed how many Years Purchace in ready Money it is worth, then look in the Table for 10 years in the outermoſt or Left-hand Column, and againſt it you will find 7 years and 4 months Rent and 3 parts of a months Rent of the Leaſe premiſed, and let the Rent be what it will, *viz.* 7 years is 70 l. and the 4 months is 3 l. 6 s. 8 d. and the $\frac{1}{10}$ of a month amounts to near 30 s. which added or put together amounts to about 73 l. 1 s. 8 d. ready Money for a Leaſe of 10 l. *per Annum.* And further as to this matter, Put caſe a Leaſe you would purchaſe has 30 Years in the remainder, and you are deſirous to know its true Value, look in the Table for 30 as before, and againſt it you will find 13 years 9 Months and $\frac{2}{10}$ parts of a months Purchace, of the Rent in preſent Poſſeſſion: Again, put caſe there be a Leaſe of 5 years more or leſs before you commence, look in the Table againſt 5 years, and there you will find 4 years 2 months $\frac{5}{10}$ part Purchace, ſubſtract this out of the Summ againſt 13, 9, 2. As for a more clearer Demonſtration mark the Example

	Y	M	P
Years 30	13	9	2
Years 5	4	2	5
	9	6	7

And ſo much is the Reverſion after 5 years Purchace worth the Remainder of 30 years, &c.

And

And theſe things, Reader, may very well ſuffice for the firſt Part of this Book, conſidering I have been conciſe in every particular, laying down nothing but what I hope may abundantly redound to the Advantage of Traders, being indeed the moſt curious Matters that particularly tend to the Satisfaction of the Induſtrious, from which I now proceed to the ſecond Part I promiſed, in hope likewiſe to furniſh it with Rules and Directions no leſs neceſſary to be known by all Lovers of Art and Ingenuity, and ſo I take my Leave as to this my firſt Part.

THE SECOND PATT:

CONTAINING

The Art of Meaſuring in all its material Parts and Circumſtances, relating to *Building*, *Glaſing*, *Paving*, *Painting*, &c. as they affect *Carpenters*, *Joiners*, *Glaſiers*, *Maſons*, *Painters*, *Bricklayers*, &c. with exact Rules for Meaſuring *Solids*, as round and ſquare *Timber*, *Stone*, &c. *Menſuration* of *Land*, &c. with particular directions for *Gauging*, and many other Things and Matters, wonderfully neceſſary to be known, for the Advantage and Benefit of Mankind on ſundry Occaſions.

THE INTRODUCTION TO THE SECOND PART.

READER,

HAving promiſed nothing in this Book but what I conceive immediately uſeful and neceſſary, you need not expect I ſhall run out by way of digreſſion, as many do, that their works may ſwell into a greater number of Pages; but conſider that what I lay down, as to theſe particulars will be not only plain and eaſie, but, as I hope, anſwer the Expectations of the Curious, and redound to the improvement of Knowledge, perhaps in the moſt ingenious Artiſt; where any Affairs and Buſineſs relating to Menſuration, &c. require his undertaking; as likewiſe many other things and matters worthy of note, to which in their order I proceed, &c.

As for Carpenters Work it is to be conſidered in its ſeveral kinds, there being a great difference in the Menſuration as to particulars, though in the main it comes to one and the ſame purpoſe: And ſeeing this by ſome is held the eaſieſt, I ſhall begin with it, and ſo regularly proceed to other Trades that require Meaſuring, &c.

CHAP.

CHAP. I.

Conſiderations relating to the Meaſuring of Carpenters Work, &c.

CArpenters Work conſiſts of many particulars, as Roofing, Flooring, Cieling, Joiſts, Partitioning; and theſe are meaſured, or rather reduced into ſquare meaſure, which uſually conſiſts of 100 Superficial Feet, being no other than the product of a ſquare Superficies, multiplied by ten Feet in length, and the like number in breadth, multiplied in it ſelf: And yet by the way take notice, That a Superficies is only that which appeareth in length and breadth, ſignifying the upper part or outſide appearance of any thing, as in caſe of a ſquare incloſed with four diſtant or Parallel Lines on a ſheet of Paper, or plain Board, *&c.* and from thence the meaſuring of Flooring, Partitioning, *&c.* are called Superficial Meaſures, by reaſon their thickneſs is not conſidered in the Menſuration; and in this Rule Plaſtering, Glaſs, Painting, *&c.* are comprehended; for although, in Flooring or the like, according to the ſtrength of Building, one may exceed the other in ſolidity or thickneſs, yet the meaſuring is accounted all one, as to the manner, though it is conſidered in the bargain, by agreeing for a greater rate in the ſquare, which is but equitable between the Taker and the Letter, though not taken notice of in the manner of Meaſuring, and of this meaſure 12 inches every way is termed a Superficial ſquare Foot in Painting, Glaſing, Flooring, *&c.* but the Prizes, according as the Difficulty or Coſt is more or leſs, differ as the parties (at firſt or laſt, have, or) can agree, though Windows

dows are many times ſet down in their Bills, at ſo much a Light, without any certain meaſure; and ſo frequently are Door-caſes, Mantle-trees and Turſels, at ſo much a piece; the Linteling, Guttering, Window-boards, and Cornice, at ſo much a Foot, and the Stairs at ſo much a pair, or as they can agree in the whole; and the better to underſtand the way of meaſuring, I now come to demonſtration.

In caſe a piece of Glaſs, Flat-ſtone, Plaſtering or Painting, or any thing requiring ſuperficial meaſure be found in length 11 inches, and in breadth 9 inches, both amounting to the ſumm called the Dimenſion, and you are deſirous to know the Area or Contents; obſerve as followeth, *viz.*

Example I.

Set down the Dimenſion in this manner

11 the length
09 the breadth.

This done multiply by the breadth, and you will find that the product or what it produceth is no leſs than ninety and nine inches, which are accounted half a Foot; and 27 inches or a little more than $\frac{2}{3}$ of a Foot, ſo that the product of eleven inches multiplied by nine inches, making 99, contains 8 ſuch inches as make 12 the ſuperficial Foot, *viz.* 8 inches, whereof each inch is an inch in breadth, and 12 long, ſo that eight times twelve is 96, accounted $\frac{2}{3}$ parts of a Foot, and then the remaining three inches make up 99, and theſe three inches which make up the Product may be termed three parts of ſuch an inch, as I have accounted an inch in breadth, and twelve in length; for it is to be noted, that in a ſuperficial Foot there is contained 144, which is no other than the product of twelve inches, multiplied by twelve in this manner. 99

12 length

12 length
12 breadth

The Product 144

As for an Oblong body, it differs from a ſquare, as wanting the breadth to anſwer the length, and in this caſe half a ſuperficial Foot, which is 72 inches, is derived or produced from an Oblong, very near a ſquare, being 9 inches in length, and eight in breadth, nine times eight producing 72; and conſequently a quarter of a Foot is 36 inches, or the product of 6 inches multiplied by 6, or 9 by 4.

Dimenſions in Feet, what they are, &c.

Put caſe you have a Timber floor, a Pavement of Stone, or a Cieling of Plaſter, a Partition of Wainſcot, or any thing that requires a ſuperficial meaſure, that contains in length 22 Feet, and in breadth 18, and you are deſirous to know, as it relates to Carpenters work, how many ſquares are contained in it. Take your Dimenſion in the following order, *viz.*

	Feet
	22
	18
	176
	22
Superficial Feet	396

And theſe being multiplied, you will find the product that is to anſwer. *viz.*

And to bring theſe Feet into ſquares, divide 396, which is the content in Feet, by 100, which is the content of a Square, whoſe ſides is 10 Feet, and the Quotient is 3 Squares, and 96 Feet in Remainder; as for Example.

96 Feet.
396 (3 Squares.
100

* In this you have it plainly demonſtrated, that there are 4 ſquares of Flooring wanting 4 feet; or 3 ſquares, three-quarters of a ſquare, and 21 feet:

feet: But in caſe the Dimenſion had been Maſons work, then had there needed no diviſion, by reaſon their work is by the foot; for there had been 396 feet of Pavement, ſuperficial, or with flat Stone; yet in caſe of Painting, Plaſtering, or Wainſcoting, the feet muſt have been computed in yards, dividing 396 by 99, being the number of feet contained in a ſuperficial Yard or Quadrate of 3 feet every way; as for Example.

3
396 (44 Yards.
99

And thus upon dividing 396 feet, by one yard or nine feet, you will find 44 yards in the Quotient, which are the true number of yards contained in a Superficies of Painting, Plaſtering, Wainſcot or Hangings, &c. containing only 18 feet in breadth, and 22 feet in length, ſo that by this method any product of this kind may be with much eaſe found out, according to the exactneſs of Rule, &c.

Yet again, as for Example, put caſe that a Floor or Partition be in length 146 feet, and in breadth 97.

Set down the Dimenſion in this manner

And this being multiplied the product is

Feet.
146
97
1022
1314
14162 Feet.

Which being divided by 100, yieldeth 141 ſquares, and 62 feet; or refuſing to divide it, you may count it in this manner, *viz.* One hundred forty one hundred ſixty two, which amount to 141 ſquares and a half and 12 feet; and if you undertake to bring the ſame Dimenſion into yards, then you muſt divide the product of the multiplication, conſiſting of 14161, by one yard or nine feet, as

in

in the precedent Example; yet let us come to this Example, as thus

563 (5 Feet.
14162(1573 Yards.
9999

So that in the Quotient you find 1573 yards and 5 feet, the remainder, which produces half a yard and half a foot, and thus much touching Menſuration, relating to Dimenſions of whole Feet.

CHAP. II.

Directions for Meaſuring, or taking Dimenſions in Feet and Inches, for the better Inſtruction of Workmen, &c.

IN this way of Menſuration, ſuppoſe a Floor, a Partition, or any ſuperficial, as Plaſtering, Painting and the like, conſiſt of 21 feet, and 6 inches in length, and 15 feet and 6 inches in breadth, and you are deſirous to know how many ſuperficial feet it contains, and ſo by courſe how many ſquares or yards: Set down your Dimenſion in this order

Feet	Inches.
21	06
15	06

And this being done the next thing you are ſo obſerve is to multiply the feet, and the product is

105
21

315

And obſerve next, for the 6 inches in length and 6 in breadth, to multiply them Diagonal or Croſs-wiſe into the feet, and ſay 15 times 6 inches, or 6 times 15 inches being 7 feet 6 inches; or to cut it off ſhorter, ſay 6 inches is half a foot, the half of 15 feet is 7 feet 6 inches, and that you muſt add

to

to the former product 315; and in the next place multiply the 6 inches in the breadth, into the 21 feet in the length, continuing to say the half of 21 feet is 10 feet and 6 inches, which must be added to the former; and lastly you must multiply the inches, called the Inches of Breadth, into those of the Length, saying 6 times 6 is 36, which number of 36 is to be accounted of as 3 inches, as I shall more plainly demonstrate hereafter, and by the way take notice how many times 12 you find in the product of the inches being in themselves multiplied, so many to the former work you must add, as in this Example you will find you have 3 times 12 in 36, whence note it is accounted the best way to begin first the Multiplication towards the left hand; *viz.* the feet into the feet, and afterward the inches into the feet: And now I proceed to an Example of Operation, as you may note in the figures, *&c.*

	Feet	Inches.
The Length	21	6
The Breadth	15	6
The feet multiplied	105	
	21	
The Product of these feet	315	
The half of the 15 feet, or the product of the 6 inches being multiplied by 15 feet.		7 6
The half of 21 feet, or the Product of 21 feet, being multiplied by 6 inches.	10	6
The Product of 6 inches multiplied by 6 inches, which produces 36, or 3 times 12, which as I have mentioned is 3 inches.		0 3
	333	3

Then

Then put your ſumm together, beginning at the inches on the right hand, and ſo proceed to ſay 3 and 6 is 9, and 6 is 15, that is 15 inches computed at 1 foot 3 inches, then ſet 3 down under the Column of inches, ſo proceed to carry 1 to the feet, and ſay 1 that I carry and 7 is 8, and 5 makes 13, upon this ſet down 3 in the place of the Unites beneath the feet, and carry one to the next place, ſaying 1 that I carry and 1 is 2, and 1 is 3, which you muſt ſet down on the left ſide of the former 3 under the place of the Tens, then proceed in the next place to 3, which being in the place of Hundreds makes or ſtands for 300, then ſet that down on the left ſide of the other two threes, by which means you will find the Product of 21 feet, 6 inches, being multiplied by 15 feet and 6 inches, to amount to 333 feet and 3 inches, as in the Example it is demonſtrated.

If in this caſe you would be ſatisfied how many Squares of Carpenters work there is in the Dimenſion of 333 feet, 3 inches, then you muſt either divide the number by 100, or cut off the two laſt figures in this manner 3 | 33, and proceed to ſay 3 ſquares, 33 feet, and 3 inches; and in like manner in 14162 cut off the two laſt figures in this manner 141 | 62, and ſay 141 ſquares and 62 feet; and the like in other numbers conſiſting of three or more figures, cut off the two laſt figures to the right hand, and the remainder will prove the number of the ſquares; but if you are deſirous to inform your ſelf how many yards there are in 21 feet, 6 inches in length, and 15 feet, 6 inches breadth, you muſt, as is before laid down, divide the Product of the Dimenſion 333 by 9 feet, being the number of feet in a ſquare ſuperficial Yard, as for Example.

```
6
333 (37 Yards
99
```

And

And ſo your Quotient being 37 Yards, the three Inches muſt be added after you have divided.

Roof Meaſuring, &c.

In caſe you come to the meaſuring of a Roof, and the building ſuppoſed to be 30 feet in breadth, from the outſide of one Wall to the outſide of another, and 65 feet in length to render it proportionable, and you are deſirous to know how many Squares of Roofing there is in the building, conſider that if the Roof be true pitch, there is no need of meaſuring the length of the Raſters, ever conſidering in that caſe that the length of the Rafter is three parts of the breadth of the building, ſo that the breadth being 30 feet, the Rafter muſt be 22 feet, 6 inches, which on both ſides make 45 feet, which is the due proportion for Rafters ſuitable to a building 30 feet over: Then multipiy 45 by the length of the building, being 65, and ſo you will find the Product to be 29 | 25, which conſiſts of 29 Squares and a quarter. There is yet another way which many take as the briefer, *&c. viz.*

Multiply the length 65 by the breadth 30, and ſo you have 1950 feet for the flat of the building, then add half the number of the feet in the flat *viz.* 975 to 1950, and the Product will be 2925; and further you may thus add the half, *viz.* ſaying the half of 19 is 9, and becauſe two nines make but 18, carry 1 that remains to the next figure being 5, and for that 1 that of the 19 remained after it was divided, you muſt add 10 to 5, ſo that it make up 15, then the half of 15 is 7, and there remains 1, add the remaining 1 to the Cypher, and it makes it 10, and then proceed again to ſay the half of 10 is 5; as for Example, in theſe ſeveral Reſpects, *&c.* I ſhall more plainly demonſtrate.

The

The Example.

	Feet Inch
The Rafters length on one side of the Roof you may obſerve to be	22—6
The length of the Rafter on the other ſide	22—6
The length of both being added are	45—0
The length of the building to be multiplied by 45	65—0
	225
	270
The Product	2925—0

To meaſure a Gable-end the exacteſt way.

Put caſe the Timber building happen to be 40 feet in breadth, and the whole Carcaſs of it, the Gable-end excepted, be meaſured. Then to meaſure it, you muſt by the whole Perpendicular multiply half the Baſe, or half the Perpendicular by the whole Baſe, and it gives you an Area or the content of it; the Plate whereon the Rafter ſtands, being the Baſe, and that in length 40 feet, and the Perpendicular, 22 feet, and 4 inches; as for Example.

	Feet In.
Obſerve the half Baſe to be	20—00
And the whole Perpendicular	22—04
The Product of 2 multiplied by 20	40—00
The Product of 20 by 20	400—00
The Product of 4 Inches multiplied by the 20 Feet,	06—08
The Total Product	446—08

If

If ſo it fall out there be two Gable-ends, and both in the building alike, then you muſt put down the Total Product twice; and if four Gable-ends, then four times; and note, if the building happen to be ſquare at four right Angles, and the Roof be true pitch and breadth, 40 Feet the length of the Rafter; as alſo the Hip Rafter, with the Angles they make, and the length of the Diagonal Line, as alſo of the Perpendicular are as followeth, *viz.* The breadth of the building 40 feet, the length of the Raſter 30 feet, the length of the Hip Rafter 36 feet, the length of the Diagonal Line 56 feet, 6 inches $\frac{2}{3}$, the length of the Perpendicular 22 feet, 4 inches, $\frac{1}{4}$.

Directions in meaſuring a Hip'd Roof, &c.

In this caſe your building conſidered to be 60 feet in length, and in breadth 40, ſtanding by it ſelf, and Hip'd from each Angle, the Roof true Pitch, and the Angles right, and ſo you are deſirous to know how many ſquares of Roofing there is in it. Multiply the whole length, being 60 feet, by 30 feet, and the length of the Rafter on one ſide of the ſaid Roof; or you may add 30 to 30, making 60 for both ſides of the Roof, after which multiply 60 by 60, and you will find the Product to be 3600, or 36 ſquares in the Hip'd Roof: as thus,

The length on the Ridge from one Hip to the other is 20 feet, and at the Plate the length of the Roof 60 feet. Theſe two ſumms being added together make 80 feet, the half of which is 40, which is the mean length of the Roof; if in the middle you meaſure between the top and the bottom, then muſt you multiply the 40 feet by 60 feet, that being the length of both Rafters on each ſide of the Roof, and the Product is 2400 which

is

is the true measure of both sides the Roof.

Directions for the true Measuring the Ends of a House, &c.

Suppose the Ends be each of them 40 feet according to the former Dimension, and the Rafter of each end in length to be 30 feet, each of these Ends being a Triangle, yet must they be measured as the Gable-end; and to do it multiply 40 feet, which account the Base, by 15 feet, containing one half of the Rafter, and so you will find the Product to be 600, and the other end of the Roof being Parallel or the same, add 600 to the 600 already gained, and they in Conjunction make 1200, which added to 2400, the Product of the two sides, make 3600, or 36 squares. Now suppose your business is to measure a Roofing of a Corner-house, that being in length 60 feet and broad 40, and each way joining to other Houses, so that there will be but one Hip and one Sleeper, yet for all that the Dimensions will be the same, as also the number of Squares found in it, provided the Roof be true Pitch, and the building exactly square; as for Example, the whole length of the Roof being 60 feet, and the length of both Rafters 60 feet, the Product or number of Squares are consequently 3600: And for further demonstration, if the length of the Roof be 20 feet on the top, to it add the length of the Roof at the Plate which is 60 feet, and the summ is 80 feet, the length of both Rafters 60 feet, which being multiplied by 40, the mean between 60 and 20, the Product will be 2400, and that is the content of the two sides.

As for the Ends, the length of the Base being 40 feet multiplied by 15, the half of the Rafter, produces 600 feet, to which add the measure of

the

the other end, being 600, and the ſumm, *viz.* 1200, is the content of both ends, to which having added the content of the ſides 2400 feet, the Area or content of the whole Roof is 3600 feet.

Directions to find the Hip for a Roof, in breadth 20 feet, &c.

In this caſe conſider if 40 feet give 36 feet, what will be given by 20? Then multiply and divide, and you will find 18, as for Example.

36	3	
20	720	
——	400	18
720	4	

And in this manner you may find any of the reſt, remembring to add the Eves, Boards and Rafters feet in the Bill of meaſuring: And further take notice, that the ends of Girder, Breſtſomers, and Plates ought to be put into the Bill of Meaſuring, and in Menſuration of Carpenters Work an allowance ought to be made for thoſe ends of Joiſts that of neceſſity muſt lie in the wall of Brick-houſes, not exceeding 9 Inches into that part where they are entered: But in caſe of meaſuring Flooring and Boarding, then 6 Inches is ſufficient; and thus much may ſuffice for the Menſuration of Carpenters Work, *&c.* as to theſe particulars, though I ſhall give a further light into it, when I come to the Menſuration of Solids, *&c.*

CHAP.

CHAP. III.

Directions for Meaſuring of Joiners Work, and what is materially to be conſidered therein, according to the trueſt Rule, &c.

AS for Joiners Work, though it differs in ſome things, yet in the main it agrees with that of Carpenters in the way of Meaſuring, and the chief difference is, that Carpenters Work is brought into Squares, and Joiners Work into Yards; which to bring to paſs, after all your Dimenſions are caſt up, and reduced to Feet, the Product muſt be divided by 9, and that will give you the number of Yards, and this you muſt do becauſe three Feet in length, and as many in breadth contain a ſquare Yard of nine Feet ſuperficial.

Now ſuppoſe ſome Dimenſions ſhould be caſt up, whoſe contents are as followeth; for to run over again what is already done, in relation to Dimenſions, would be too tedious, *viz.*

The Example, or Proof, &c.

Wainſcot.	
Feet	Inches.
110	08
304	07
065	06
934	02
041	00
073	01
1529	00 The Total

68 (8
1529 (169 Yards, 8 Feet.
999

And theſe feet divided by 9, may be brought into Yards, and make, as on the right hand you may

may ſee, 169 Yards, 8 Feet, which in the Bill of Meaſuring muſt be placed at ſo much the Yard, according as it is agreed upon.

As for Cornices, Baſes, and Sub-baſes, which are properly Joyners Work, they are taken by the Foot Line Meaſure, or running Meaſure, and by the ſame Line-meaſure are Freizes and Architraves meaſured by; as alſo Chimney-pieces meaſured by, unleſs agreed for by the great, faſtening the Line on the top or any other convenient part, if it cannot be brought round, and then preſſing into the mouldings or dents, taking thereby the advantage of the intire Workmanſhip. As for what further relates to Menſuration, I refer the Reader to what has been ſaid of Carpenters Work, *&c.*

CHAP. IV.

Directions for Meaſuring Glaſs, or Glaſiers Work, after the Neweſt and Exacteſt manner.

GLaſiers Work is meaſured with a two Foot Ruler, divided into 24 Parts, and each of them into 8 Parts; and in this caſe ſuppoſe you have a Pane of Glaſs conſiſting of 5 Feet, 8 Inches and a half in length, and in breadth 5 Feet and 7 Inches, and you are deſirous to be ſatisfied in the Area or Content of it.

	Feet	Inch.	Pa.
Set down your Dimenſion, *viz.*	5	8	6
	5	7	3

This done obſerve it thus, 5 Feet, 8 Inches, and 6 parts of 12, which is the ½ Inch, by 5 Feet, 7 Inches and 3 Parts of 12, which is the ¼ Inch. After this multiply the Feet and Inches one by the other, ſaying, 5 times 5 is 25 Feet, which ſet down under the Feet, multiply 5 by 8 croſs ways which is 40 Inches or 3 Feet and 4 inches; ſet this down, and in the next place multiply 7 by 5, which is 35 inches, or 2 feet, 11 inches; ſet this down likewiſe, and proceed to multiply 7 inches by the 8, and you will find it 56 inches, of which 144 are accounted the ſuperficial Foot, for which 4 inches muſt be ſet down by reaſon you can have but 4 times 12 out of 56, and there remains 8, wherefore 4 inches are ſet down and 8 parts, of which 8 parts 12 make an inch, and 12 of theſe inches are reckoned a Superficial Foot; then multiply the parts of the inches croſs-ways, firſt into feet, as 6 times 5 is 30, which is two inches and ſix parts, and theſe being ſet down ſay, 5 times 3 is 15, and 1 inch and 3 parts, which you muſt likewiſe put under the reſt; after this multiply the parts of inches croſs-ways into the inches, ſaying 6 times 7 is 42, which is three parts and a half, for which ſet down 3 under the place of parts of inches, and 6 againſt it towards the Right-hand, ſignifying half a part of a part, by reaſon 12 of thoſe parts make one ſuch part, whereof there are 12 in an Inch-line-meaſure; which being ſo ordered multiply 3 by 8, which is three parts by eight inches, that makes 24 parts, for which you muſt ſet down 2 under the part of inches place, and conſider, that as in multiplying the inches by the inches that you account every 12 of the Product for an inch; and ſo in multiplying into the inches the parts of inches, you muſt account every 12 of the Product for one

part,

part, as in multiplying 3 parts by 8 inches, there is produced twice 12, or 24, therefore you muſt ſet down 2 under the place of parts, &c. And then you muſt multiply the parts of Inches by the Parts, if you be exceeding exact in Meaſuring, and proceed to ſay, 3 times 6 is 18, which contains 1 part and half of the twelfth part of an Inch-line-meaſure, as by the Dimenſion caſt up will further appear.

Example.

	Feet	In.	Parts.	
	05	08	06	
	05	07	03	
Of 5 feet by 5 feet the Pro. is	25	0	0	
Of 8 inches by 5 feet the Pro. is	03	4	0	
Of 7 inches by 5 feet the Pro. is	02	11	0	
Of 7 in. by 8 in. the Pro. is	00	4	8	
Of 6 parts by 5 feet the Pro. is	00	2	6	
Of 3 parts by 5 feet the Pro. is	00	1	3	Par.
Of 6 parts by 7 inch. the Pro. is	00	0	3	6
Of 3 parts by 8 inch. the Pro. is	00	0	2	0
Of 3 parts by 6 parts the Pro. is	00	0	0	1 $\frac{1}{2}$
And in this caſe the Porduct of the Total is found to be	31	11	10	7 $\frac{1}{2}$

And here you have the content of 5 Feet, 8 Inches and a half, or 6 parts of 12 in length, being multiplied by 5 feet, 7 inches and $\frac{1}{4}$, or 3 parts of 12 in breadth, is 31 Feet, 11 Inches, and 10 Part, of an Inch, reckoned to have 12 Parts, and 7 and $\frac{1}{2}$ of one of thoſe Parts; and in this manner you may proceed to know the content of any meaſuring of Glaſs, &c. it being

only Superficial, no Content in Solid being required.

CHAP. V.

Inſtructions for Meaſuring different Light Windows, and Directions for ſetting down the Dimenſions, and many other Things and Matters worthy of Note.

CONſider that in meaſuring Glaſs there are many things to be obſerved, as the manner of work is more or leſs different, for it may eaſily be obſerved in one and the ſame Window, that the Panes or Panels of Light, are not only of divers forms, but differ in bigneſs or Dimenſion, and often in a Six-Light Window, there are Panes of Glaſs three of one Dimenſion and three of another, ſo in a Four-Light Window, two generally differ in bigneſs from the other two, and as theſe or any other of the like kind agree, or diſagree, you need take your Dimenſion from only one of a ſort.

In caſe you were to meaſure a Six-Light Window, and the upper Panes were all of them 2 Foot, 6 Inches in height, and 1 Foot, 2 Inches over, and the Panes beneath them 6 Feet, 4 Inches in height or length, and in breadth 1 foot, 2 inches, there need be but 2 Dimenſions in theſe 6 Panes; as for demonſtration, ſet them down in the manner and form following.

Feet	In.	Par.	
2	6	0	(3)
1	2	0	

F.	I.	P.	
6	4	0	(3)
1	2	0	

As for the 3 within the Parenthesis it ſignifies 3 times the Dimenſion that it ſtands againſt.

And

And for that cauſe when you have caſt up the Dimenſion, the Product of it you muſt multiply by 3, ſetting that down for the 3 Panes; as for Example.

	Feet	In.	Par.	
	2	6	0	(3)
	1	2	0	
And in this caſe you taking a further conſideration of the former Lights, and their proper Dimenſions, you will find that the Product of one Pane is.	2	0	0	
		6	0	
		4		
		1		
	2	11	0	
Which multiplied by 3, by reaſon there are 3 panes of equal bigneſs.		3		
The Product will be	8	9	0	

Being the content of the 3 Panes.

Then the remaining 3 being either of them 6 foot, 4 inches in length, and 1 foot, 2 inches in breadth: Set down in the following order, and multiply.

	Feet	In.	Par.	
	6	4	0	(3)
	1	2	0	
The Product of 6 feet by 1 is	6	0	0	
Of 2 Inches by 6 Feet the Pro. is	1	0	0	
Of 4 Inches by 1 Foot the Pro. is	0	4	0	
Of 2 Inches by 4 Inches the Pro. is	0	0	8	
The Product, Total, or Content is	7	4	8	
Which multiply by		3		

	7	4	8
			3
And proceed to say 3 times 8 is 24 parts or two inches. And set under the part a Cypher.			0
Then go forward and say 3 times 4 inches is 12 inches, and 2 you carried make 14 inches, or 1 foot, and 2 inches. Then set the 2 inches and carry the foot to the feet.		2	
Go on again and say, 3 times 7 is 21 feet, and 1 that you carried is 22 feet: Set that down and add them, and the Product is	22	0	0
	22	2	0

The Content or Area of the 3 Panes.

	Feet	In.	Part.
The Content of the first 3 Panes is	08	9	0
The Content of the last 3 is	22	2	0
And are put together,	30	11	0

Which indeed is the Content of all the six Panes in the Six-Light Window, and by this one you may calculate all the Six-Light Windows of the same bigness in the Building.

Directions for measuring a Window of Four Lights.

A Four-Light Window, if the Panes are of an equal Dimension, requires but one Pane to be considered, for by that the rest may be computed; and though they differ, yet one Pane of each bigness will suffice for the other two. And now put case the upper Pane be two feet and an inch in length, and one foot eight inches and an half in breadth,

breadth, and you would know the Dimenſion; and the lower Pane be four feet in length, and two foot, eight inches, and an half in breadth. Begin then with the upper Pane, and ſet it thus, in order to knowing its Dimenſion.

Feet	In.	Par.	
2	1	0	(2)
1	8	6	
2	0	0	
1	4	0	
	1		
	0	8	
	1	6	
3	7	2	
3	7	2	
7	2	4	

And thus you will find the Content of the firſt Pane to be
The other Pane added the like,
When as the Content of both the upper Panes will amount to

This done ſet down the Dimenſion of the other two Panes in their order, *viz.* the two lower ones.

Feet	In.	Par.	
4	0	0	(2)
1	8	6	
4	0	0	
2	8	0	
	2		
6	10	0	
6	10	0	
13	8	0	
07	2	4	
20	10	4	

And the Content of one is
And by reaſon there are 2 that ſtands, *viz.* the figure (2) againſt the Dimenſion, you either add or multiply it by 2,
The Content of the Panes is
To which add the Content of the upper Panes
And ſo you will find the Content of the 4 Panes in the Four-Light Windows to be

viz. twenty feet, ten inches, and four Parts.

Directions for ſetting down Dimenſions in a Pocket Book, for the readier finding out their exactneſs upon Occaſion, &c.

OBſerve before you undertake to ſet down the Dimenſions, to divide the breadth of your Page into ſo many Columns as the occaſion intended requires, with Lines drawn by a Penſil, ſuffering the diviſions to be four at leaſt; and before you ſet down any Dimenſion it will be convenient to ſet down the name of the Workman, and Workmaſter, with the date of the year you have meaſured in; and if it be Glaſed with ſquare Glaſs, you muſt write Squares above your Dimenſions, and Quarries over thoſe that are Glaſed with Quarries, that when it is your Buſineſs to make the Bill of Meaſurement, you may be knowing and exact therein, by expreſſing them ſeverally according to their Prizes or the Agreement if any be made: As for your better Inſtruction I will give you an Example.

Glaſing done for T. G. *by* J. P. *of St.* Martins *in the* Fields, Decemb. 2. 1687.

	l.	*s.*	*d.*
For 96 feet and 3 inches of Glaſs done with Quarries at 5 *d. per* foot	02	00	01 ¼
For 52 feet and 1 inch of Glaſing done with Squares at 7 *d. per* foot	01	10	04 ½
The Total Summ	03	10	05 ¾

As for meaſuring of Rounds, Ovals, and the like, I ſhall ſpeak of it in another place, though it may be applied very properly to what has been treated of; yet another occaſion requiring it, I muſt refer the Reader thither, and proceed to the Menſuration of Painting.

CHAP

CHAP. VI.

Directions for the Measuring of Painting, and what relates thereto, for the best management of that Affair.

AS for Painters work it is termed superficial, that upon the Plane as Joiners and Glaziers and brought into the yard by the Augmentation of feet, though it is more nicely handled and managed, especially in curious Work, where any Intricacy happens by reason of any Juttings, Moldings, Frames, Cornices, Friezes, Architraves, and the like; for therewith the Line-measure, as I have hinted in the Joiners Work, the Indents are measured, and all the Angles computed by measuring the Line afterward by the Rule, and for the better keeping it in memory setting down the summ.

The most speedy way is first to take the height of the Dimension, and that known to fasten your Line to one Angle of the Room or place you intend to measure, and so bring it with exactness upon the Plane till you having measured the Moldings or Juttings by way of Indent, bring the Line directly to the bottom of the Work, and with your Rule measure the length of the Line, and put down the summ, after that begin in one Angle, measuring the side where you took the height, setting down the length under the height, and it is properly one Dimension; and if the Room be exactly square the other side equally answers, and so you may spare the trouble of casting it up, by doubling the other already set down; and so consequent those parts usually called the ends.

Thus having conſidered and brought your Dimenſions into feet and inches, by exactly caſting them up, you muſt divide the whole Product by nine, and ſo bring the Feet into Yards, as you have been taught in the Menſuration of Carpenters Work, but from theſe Bricklayers Work, to which I next proceed, ſomewhat differs in Meaſuring, by reaſon it requires a ſolid Menſuration for the moſt part, by reaſon the thickneſs as well as the breadth requires to be known.

CHAP. VII.

Directions for the Meaſuring of Bricklayers Work, &c.

THis meaſure becomes ſolid, by reaſon in moſt ſubſtantial matter it is a Brick and a half thick, which is called Solid, and that Brick and a half ought to be 14 Inches, which is the length of one Brick and the breadth of another, and as you have found that Carpenters Work is brought into Squares, ſo this ſort of Work muſt be reduced into Rods, a Rod containing 212 ſquare feet and three inches, and is produced from ſixteen feet, ſix inches in length, being multiplied from ſixteen feet, ſix inches in height or breadth, or a Quadrate, whoſe ſide produces a Pole or Perch. And becauſe generally this Work is thicker at the bottom than at the top, the whole in this caſe muſt be reduced to the uſual thickneſs of a Brick and a half, which for your more readineſs and eaſe obſerve to do thus, *viz.* ſet down in diſtinct Columns each thick-

thickneſs, as firſt ſet down nine inches, which is a Brick called the firſt Dimenſion, and in another Column ſet down the Dimenſion, that is a Brick and a half in thickneſs: And ſo that of two Bricks and two Bricks and a half thickneſs by themſelves in diſtinct Columns, as likewiſe the Dimenſion of three Bricks, and ſo conſequently any thickneſs as the work requires.

After your Dimenſions are taken caſt them up ſeverally, and by adding their Products together of one thickneſs, till you have produced the Total Product, then bring it into one Brick and a half work in this manner, *viz.*

If the caſt up Dimenſions be one Bricks length in thickneſs, *viz.* the breadth of two Bricks, then muſt the Total Product be multiplied by two, which in the leaſt denomination is the Walls thickneſs, *viz.* twice four inches being the breadth of two Bricks, and divide that Product by three, by reaſon the breadth of three Bricks go to a Brick and a half, and the Quotient is the ſumm of the firſt Brick work, reduced to a Trick and a half.

As for Example.

When you have caſt up your ſeveral Dimenſions of one Bricks length in matter of thickneſs, and the Contents or Products of every Dimenſion put together, it produces a Total Product of 4976 feet of Brick work, being one Brick in thickneſs, and to reduce this to one Brick and a half in thickneſs, multiply 4976 by 2, *viz.* the breadth of two Bricks, and it brings it into the leaſt denomination of thickneſs, *viz.* four inch work, or Brick work, half a Brick thick, as thus

4976
2

So that in this kind the Product of 4 inches is 9952

As

As for the firſt that remains it is one foot of four inches work, or four inches of one Brick and a half work when reduced; for if you go about to divide 12, which make the inches in the foot, by 3, their number of four inches or half Bricks in a Brick and half, the Quotient will be found found 4, which is four inches, or the third part of a Foot.

In this manner obſerve your Dimenſions that exceed a Brick and a half in thickneſs, or that be two Bricks length in thickneſs, containing the breadth of four Bricks, you muſt in reducing two Brick work to one Brick and a half work, firſt multiply the ſumm by 4, and divide by 3 the Product.

As for Example.

If it ſo fall out that you have 5845 feet, of two Brickwork, what remains, but that you multiply it by 4, and the Multiplication.

Then the Product muſt likewiſe be found to be

5845
4
——
23380 Feet.

Of 4 inch work and the Diviſion in this manner

221 (1
23380 (7793
3333

Then you ſee the Quotient is 7793 feet of one Brickwork, and one the Remainder, which is one foot of four inch work, and that being reduced, as I have already directed, is 4 inches, or the third part of a foot of work called one Brick and a half work; and ſo in 5845 feet of Brickwork, containing containing 2 Bricks in thickneſs, you have upon the Reduction of 7793 feet, 4 inches of 1 Brickwork and a half.

If ſo it happen that your Dimenſion be two Bricks and a half in thickneſs, you muſt multiply the

the Total Product by five, dividing the Product of that multiplication by three.

If ſo it fall out that your Dimenſion is in thickneſs three Bricks, it is but doubling the Menſuration of a Brick and a half thickneſs, and you have it without any further trouble; but in this kind of Menſuring they come to account no nearer than whole Inches, for as for the part of inches there will be an allowance found, when you divide your number of Feet to bring them into Rods; directions for which take in the following Chapter.

CHAP. VIII.

How after the beſt and eaſieſt manner to bring Feet into Rods, &c. and other meaſure.

THE ſeveral thickneſſes being reduced to a brick and a half, divide the total Product by 272, being the true number of Feet contained in a Rod, by which the Feet are brought into Rods, ever obſerving that three Inches are allowed to the Rod, as vantage to make up the parts of Inches loſt in the Foot meaſure, *&c.* though if a Workman will give himſelf the trouble he may meaſure them, and caſt them up, but the trouble is frequently more than the value.

But now I proceed to an Example of meaſuring a ſuppoſed Building of three Bricks.

Example.

Example.

	Feet	In.	
Suppoſe the length of the Front is	25	00	(2)
The height of the Brickwork is 2 Courſes, or	00	06	
The Product is	12	06	
The Rear Front being the like Dimenſion, and being joined in one Dimenſion by the figure (2) ſignifying its being doubled, you muſt add	12	06	
Which added the continent of the work of three Bricks is in this manner	25	00	
And by reaſon 3 Bricks double one brick and a half add yet	25	00	
			1 ½ Brick.
And the Content of the firſt Dimenſion being reduced into 1 ½ makes	50	00	
From which I proceed to the remaining part in the Reer in height	2 ½ Bricks 11	00	(2)
And in its length	25	00	
Which multiplied is	55	00	
	22	00	
The content of the Front is	275	00	
Which being taken likewiſe for that of the Reer makes	275	00	
The Content of the Front of 2 and a half Bricks is	550	00	
And in the Rear the ſame, the which being multiplied by	5		
The Product of 4 Inches or ½ Brickwork, is found to be	2750		

which

which you ought to divide by 3 to bring it into 1 and ½ Bricks in thickneſs.

22
2750(916
333

And in this caſe the Quotient is 916 and 2 remaining, which is 916 Feet of 1 foot and a half Brickwork, which is computed eight inches, one foot and a half when reduced; and thus much for the Front and Reer in meaſuring of this kind, from which I proceed to meaſuring the Flanks, and they muſt be taken within ſide, by reaſon the thickneſs was before meaſured into the Front and Reer at either end, which being three feet and ten Inches, muſt be taken out of the forty feet in depth, and then the length of the Flank-wall is

	Feet	In.	
	36	02	(2)
And the height of the Baſe is	00	06	
And now by reaſon both theſe Walls have a parity, and are equal in height and length, (2) ſignifying double, muſt be placed before the Dimenſion which ſerves for both the Walls, &c.	18	01	
	18	01	
The Content of both in 2 foot ½ Brickwork being computed at	36	02	
Which being multiplied by	5		
The Product of ½ Brickwork is	180	10	

Being divided by 3, whereby it may be reduced into 1 ½ feet Brickwork

180(60 1
33 10(3
3

And this is 60 feet, 3 inches and ⅓ of an inch of one brick and a half work.

Chimleys

Chimleys and Nooks, what is to be obſerved in the meaſuring of them, &c.

AS for Chimley and Angles, the Rule of meaſuring differs not much from what has been ſpoken of, though there is a difficulty in reducing them into Square Meaſure; and therefore take notice, that if you deſign to meaſure a Chimley that ſtands by it ſelf, and you are not hindered by any party-Wall, girt it about, and take that way the Menſuration in a *Medium*, conſidering the thickneſs in all parts, which may be calculated by the Jaums; but if the Chimley-back happen to be a party-wall, and the Wall be meaſured by it ſelf, then muſt you meaſure the depth of the two Jaums, and the length of the Breſt or Front, which being put together will be the length, and height of the Story will make out the breadth, at the thickneſs of the Jaums, &c.

Some there are that agree by the Harth or Grate for the Building of Chimleys, but in this caſe let them obſerve that if a ſtack of Chimley-back againſt a Wall, and yet ſo that you can meaſure both ſides, you muſt deduct for the thickneſs four Inches in Lieu of the Wall, or in its being meaſured againſt the Chimleys, it being to be allowed for the Chimley-backs; and alſo you muſt in meaſuring the Shafts of Chimleys girt a Line about them in the ſlendereſt part, and you will find their height to be your breadth; and if ſo it happen, they be four inch work, then muſt the thickneſs be ſet down at one Brick-work; but if for their better Security againſt a Storm, &c. they are carried high above the Roof, and require nine Inches in thickneſs, then muſt the thickneſs be accounted at a Brick and a half work, for

there

there muſt be an allowance in conſideration of Scaffolding, &c.

In caſe the back of a Chimley or a Wall require a Water-table, which is two and ſometimes four Inches thicker near the ground than in any other, and in caſe of two inches of that kind in a Wall, then meaſure the thickneſs above the Water-table, and add two inches, as thus, conſidering your Wall conſiſts of twenty feet in length, and two Bricks in thickneſs above the Water-table, and you have taken your Dimenſion to the height you intend, beginning at the bottom, take it at two bricks in thickneſs, adding the twenty feet the length by the height of the two inch work, *viz.* from the bottom to the ſetting off the Water-table, which being doubled is ſo much four inch work, and from thence it muſt be brought to a brick and a half work, and ſo in Chimleys.

Obſerve again, that all work in Brick, for Ornament, is done by the Foot or Rod at a certain rate, by Computation or Agreement, according as the difficulty or largeneſs requires; and in this denomination may be included ſtrait, Circular or Oval Arches over Windows, Doors, or for Lights or Ornament, Facio's with Moldings or without, Architraves to adorn the Windows, rubbed Returns, Friezes and Cornices, Ruſtick Quines and the like, and ſuch other work as requires the Brick, Axe or rubbing Stone; and take notice that in the meaſuring Arches ſtreight or circular, you muſt take your Meaſure in the middle, *viz.* if it ſo happen, that a ſtreight Arch be a Foot in height or depth, then muſt the length of it be taken in the middle of the foot, that is equally dividing with your Rule or Line, into two 6 inches, becauſe there it brings in the bearing over at the top at both ends into an equality: As for a circular Arch it muſt be girt in the middle

dle, for though the upper part be the ſegment of a greater Circle, yet by reaſon of its not extending it is made anſwerable to the lower part, and ſo muſt be computed.

As for Facio's, Friezes, Architraves, Baſes, Cornices, Moldings and Plinths, they are meaſured by the running Line or foot Line meaſure, and muſt be taken in all their Indentings to bring them rightly to be underſtood, and ſo are thoſe Jaums of Windows and Doors, that are ſplayed on the Inſide, to be obſerved in the meaſuring.

Tiling and Brick-paving, what is to be obſerved in the meaſuring thereof on ſundry Occaſions.

AS for Tiling many hold it a matter diſtinct from Bricklayers, however ſeeing few houſes are without ſuch covering I ſhall ſpeak ſomething as to the meaſuring thereof.

As for this meaſure, it is obſerved in the manner as meaſuring the Roof ſpoken of in Carpenters work, though with diſtinction, for the Workman muſt obſerve to meaſure all the Valleys and Gutters, over-Jets of the Garret Windows, and add ſo many feet as they are in length to the number of feet, in the meaſurement of the Roof. The Eves and Berg Courſes muſt likewiſe be added, and is to be done by the ſquare like Roofing; and after the ſame manner may you meaſure it by the flat of half the Building, as has been directed in the meaſuring of Roofing, adding them to the reſt, as in caſe of a Hip'd Roof.

Brick-paving is uſually done by the Yard as other Paving, and to be brought into Yards, by dividing the Product of the Feet, by the figure of 9, becauſe many times odd Corners and Angles falling out, will not give you leave to meaſure exactly by the Yard, and ſo the parts of Feet

are

are frequently required to be brought into whole Feet, and those Feet into Yards.

As for the Measuring the Gable-end in Brick-work, it agrees with that of Carpenters-work; and in measuring Walls Anglewise, joining to each other, observe that you take the length of one Wall to the outside of the Angle, and the other only to the inside of the Angle; and if you know the width of the House, and have a Gable-end to measure, or are satisfied in the length of the Base-Line of the said Gable-end, and are yet desirous to know the length of the Perpendicular, you may be fully satisfied by working it by the Rule of Three; but that not being common to every one, I shall yet endeavour to give a plainer Demonstration.

Put case 20 feet be the width of the Gable-end, and you require to be satisfied in the length of the Perpendicular, take then the length of the Rafter, which if true proportion'd is 15 feet, containing the $\frac{3}{4}$ of the width, to which add half the length of the Rafter, *viz.* 7 feet $\frac{1}{2}$, and the Product is 22 feet $\frac{1}{2}$, whereof a 11 feet and 3 inches is the Perpendicular; and this allowing, if Occasion require it, upon the defect of the true Pitch allowing a very small Vantage, will give you the Perpendicular.

How to know the Price of Work, &c.

IF you are desirous to know the price of a lesser Quantity by the greater, or a greater by the lesser; in the first place be careful to reduce the Price of a Rod according to your Agreement into Shillings, by multiplying the Pounds by 20, being the number of Shillings in one Pound, and if it so happen that in the price of a Rod there be Pounds and Shillings, then it will be requisit to add

add the Shillings to the Product of the Pounds multiplyed by 20, and by this means you will have the price of a Rod in Shillings, and then multiply the number of Shillings by 12, which are the Pence in one Shilling, and by this means you will bring the Price of a Rod into Pence, and so work it according to the Rule of Three: As for Example.

Put case you agree for 5 Pounds the Rod of Brick-work, what must according to that rate be had for 34 feet?

Consider then if a Rod which is 272 feet give 5, what will 34 feet give, and then observe to multiply.

	l.
Multiply	05
By	20 Shillings
And the Product is	100 Shillings
which multiply by	12 Pence
And the Product is	1200 Pence
And those multiplied by	34 Feet
	4800
	3600
The Product is	40800

Which being divided by 272, is to be considered in its due Order.

1360 l.
40800 (150
27222
277
2

The

The Quotient will be found to be 150 Pence for the 34 feet, at 5 pounds the Rod, which number of Pence being divided by 12, the Quotient is 12 ſhillings and 6 pence, and ſo much is the due Price of 34 feet: And in this manner may you proceed to other Examples of the like nature, as your Price is more or leſs, which for Brevities ſake I willingly here omit.

Some Conſideration on Plaſtering and Maſonry Work, &c.

AS for the meaſuring of Plaſtering, it is by ſuperficial meaſure, and muſt be brought into Yards, and in ſuch places where the Summers or Girders lie below the Ceiling, it is for the moſt part when the Workman finds Materials deducted, but if he find them not, it is rarely taken notice of in that kind.

It is further to be taken notice of that where the Workman finds the Materials $\frac{1}{4}$ is frequently deducted for the quarter, but in caſe of Workmanſhip only it is not ſo, becauſe it might bring up a bad Precedent of that kind where there are no Quarters, and indeed the Labour is in a manner much the ſame where there are Quarters as where there are none.

As for the meaſuring of Maſons Work upon the flat, it is meaſured by the Foot, and is termed in that kind Superficial Meaſure, when it relates to Pavement only; and ſo I put an end to theſe Matters, and proceed to other things not much different in their Nature and Qualities, &c.

CHAP.

CHAP. IX.

Considerations in the Measuring of Land, upon sundry Occasions, with Directions very necessary, &c.

Suppose a piece of Land be 9 Chains and 50 Links in length, and the breadth 6 Chains and 25 Links, each Chain, being known by the name of *Gunter*'s Chain, containing 4 Poles in length, and divided into a 100 Links, and at every 10 Links is a brass Ring. Multiply in this case the Chains and Links as whole Numbers, and from the Product always cut off the Figure 5 on the right Hand, and those on the Left are Acres: As for Example.

	Chain	*Link*
We have granted that it is in Length	9	50
And that the Breadth thereof is ——	6	25

4750
1900
5700

Five Acres	5	93750
		4
Three Roods	3	75000
		40
Thirty Poles	30	00000

A —— R —— P
viz. 5 3 30 —— 0000

100000 parts of Poles.

As

As for the remaining Figures that are cut off from the 5 Acres, they muſt be multiplied by 4, and the Reaſon is, for as much as there are ſo many Roods in an Acre, and 5 Figures being alſo cut off from that Product, the other remaining are Roods; then multiply the 5 Figures ſo cut off by 40, becauſe there are 40 Poles in a Rood; and then cut off 5 Figures from the laſt Product, and the Left-hand Figures are Poles: And further note, that if in your Lengths or Breadths there are under 10 Links, add a Cypher to the Left-hand.

Again, if a piece of Land be 20 poles, and 25 parts of a quarter of a pole both ways, then multiply them as whole Numbers.

In this manner,

	Poles	Parts
In Length——	20	25
In Breadth——	20	25
	10	125
	40	50
	4050	00
Poles——	410	0625 Parts.

Obſerving ever in this manner to cut off from the Product 4 Figures next the Right-hand, and they will be found to be parts of a pole, whilſt thoſe towards the Left ſtand for and ſignify poles: As thus, poles 410, parts $\frac{0625}{1000}$, and ſo of other Matters of this Kind.

A

A Rule to reduce any Measuring-Chains or Links into for the better understanding of the unpractised in this Affair.

Chains	Links	Chains	Links
5	32	9	05
	66		66
	3192		5430
	3192		5430
351	12	597	30

And in this case 5 chains and 32 links amount to 351 feet 12 parts and 9 chains, 5 links to 597 feet 30 parts, ever observing to cut off two Figures from the Product towards the right-hand, and they are parts of a Hundred, and those on the left-hand are Feet; and further observe, that if the number of Links be under 10 place a Cypher to the left-hand.

A square piece of Land, how to find out the true Content, &c.

IF a square piece of Land happen to be in breadth 122 Chaines 9 Links and 6 parts, and in length 125 Chains 6 Links and 2 parts, and you require the Content, observe.

	C.	L.	P.
The double of a 120 is 240, thus	240	9	6
The double of a 125 is 250, thus	250	6	2
	12000	4	6
	480	125	1
	120		3
	187	6	
		40	
The Product in Perches is —	60321	7	10

The

The which divide by 160, and the Quotient is 377 Acres, and the 1 remaining is 1 Perch or Pole, and to that you muſt add the 7 Links that are in the Product of the Multiplication, and the total Content is 377 Acres, 1 Perch, and 7 Links, which contain half a Perch and 1 Link; for the 10 parts that overamount, is by reaſon of its Inſignificant Value rarely ſet down or accounted for.

11
1232 (1
60321 (377
16000
166
1

Directions to divide Land into ſundry parts, as the Occaſion may require in laying out the Lots or Proportions appertaining to ſundry Perſons.

IN this Caſe, put Caſe a Field appertained unto 3 Men, *viz.* *B. C. D.* and each requires his part to be ſet out by it ſelf: The more eaſily to do it meaſure the whole Field, and ſuppoſe it contains 35 Acres, 3 Roods, 15 Poles or Perches, then the waſt part, as Gate-ways, Paſſages, Ponds, Gravel-pits, or the like, muſt, if each Man have no certain Portion allotted him, be deducted and proportionably allowed in the main, and a ſmall quantity, according to the Eſtimate be allowed out of every part and portion, to him in whoſe Lot it falls, and then an equal Diviſion muſt be made: But ſuppoſe the true Content be not known, and the Field be Triangular, or cornered, not having any exact Proportion, and you require to know the Content thereof, mark the Sides A. B. C. and let A. be conſidered at 120 Chains or Perches, B. at 160, and C. at 200, and the Perpendicular at 95. prove it thus.

	C.	L.	P.
The length of half the Base C. is	100	0	0
Which multiplyed by the Perpend.	95	0	0
	500		
	900		
The Product in square perches is	9500	0	0

And this being divided by 160, will produce you 59 Acres, one Rood and an half; for dividing 60 by 40, it amounts to one and a half: And thus you have the Content of the triangular Field, Park, Common, or the like.

And now in Consideration that Perches or Measures differ according to the Use or Custom of divers places, I shall endeavour, for the Ease of the Practitioner, to reduce one kind of Measure into another.

The Reduction of Land-Measures, &c.

Put the Case it was now required that 4 Acres, 3 Roods and 4 Perches of Statute Measure, of 16 feet and a half to the pole or perch, should be reduced into customary Measure of 18 feet to the perch or pole.

Then take care to reduce the Quantity given into the least Denomination, *viz.* Perches, by multiplying the 4 Acres by 160, so many perches going to the Acre, and the product will be in the 4 Acres 640 perches; then multiply by 40 the 3 roods, the number of perches in one rood, and the product is in the 3 roods 120 perches; then add 640 perches, and the 120 perches, as likewise the 4 perches together, and the whole Product is 764 perches contained in the given Number.

Then

The ſquare the 2 poles or perches, multiplying them in their ſelves, each ſeverally; multiplying that of 18 feet by 18 f. and that of 16 and a half by 16 feet and a half, and you will find the Product to be 272 feet and 3 inches; which done, conſider by the Rule of 3, and ſay, as 324 (which is the content or ſquare of the 18 feet perch) is to 273 feet and 2 inches, the ſquare of the other pole, ſo is 764 perches to a fourth Number deſired.

Then multiply 764 by 272 feet 3 inches, and you will find the Product to be 207999; which being divided by the firſt Number in the Queſtion, *viz.* 324, the Quotient is 641 perches $\frac{311}{324}$ of a perch, which being ſhortened is $\frac{3}{3}\frac{5}{6}$ of a perch.

Then to reduce theſe perches into acres, divide them by 160, by which means, 641 being divided by 160 you will find the remainder to be 4 acres and 1 perch: So that you ſee 4 acres 3R. and 4 perches, of 16 foot $\frac{1}{2}$ ſtatute Meaſure, being reduced, is no more than 4 acres, 1 perch and $\frac{3}{3}\frac{5}{6}$ Parts of a perch of 18 feet: So that conſequently 4 acres 1 perch and $\frac{3}{3}\frac{5}{6}$ parts of a perch cuſtomary meaſure, is of ſtatute meaſure 4 acres, 3 roods and 4 perches: And by this Rule any different Meaſure is reduced, or a greater quantity of acres adjuſted and computed: From which I proceed to the menſuration, or meaſuring of Solids; a thing very uſeful and neceſſary to be known by all Perſons who addict themſelves to Sciences of this kind; ſo that nothing may be wanting that any ways tends to the Benefit or Advantage of the Reader.

CHAP. X.

Directions in order to the Menſuration of Solids, with eaſie Rules and Inſtructions tending thereto.

BY a Solid is meant any Solid body, or where a thickneſs is to be meaſured, as Stone, Timber, and all things of greatneſs that require to be meaſured; for as from the motion of a Line as Superficies is made, ſo from the motion of a Superficies is produced a Mathematical ſolid body, and as it falls out that a Superficies conſiſts of length and breadth, ſo a Solid conſiſts of length, breadth, depth, or, as we term it, thickneſs.

In meaſuring a Cube ſolid it muſt be obſerved, that it hath an equal length, breadth and depth, in the form of a Dye, being every way a perfect ſquare; and as in Plains it is only required to multiply the breadth by the length for attaining the Content, ſo in the menſuration of Solids you muſt multiply the breadth by the length, for the gaining the Superficial Content, and multiply that Superficial Content by the depth of the Solid body, and the Product will be found to be the ſolid content; as for Example:

Suppoſe you have a Solid which is 12 inches every way, firſt multiply 12 inches, the length by 12 inches the breadth, and then you will find the Product to be 144 inches, being the Superficial Content, which multiplied by 12 inches the depth, will allow you 1728 inches for the ſolid Content of the ſaid Cube, to prove which:

Set

	Inches.
Set down the length	12
The Breadth	12
	24
	12
And, as I have ſaid, the ſuperficial Content is found to be	144
Which multiplied by 12 the depth.	12
	288
	144
The ſolid Content will produce	1728

Which is a Cubical foot or foot Solid, ſo that by a foot of Timber, Stone, or any thing that is ſolid, containing 1728 inches ſolid, it is to be conſidered that the half foot contains 864, and the quarter of a foot 432.

Again, ſuppoſe you have a ſolid piece of Stone or Timber that is 4 feet, 5 inches in the ſide, and you would know how many feet it contains in the Solid. In this caſe find out the Content of the ſide, by multiplying by it ſelf 4 feet, 5 inches, and you will find it produce 19 feet, 6 inches and 1 part, for the ſuperficial Content of the ſide; which again being multiplied in the Product by the ſame 4 feet, 5 inches, 86 feet, 1 inch 10 parts, and that is the Content required; as as for Example.

	F.	I.	P.	S.	T.
The side that is given	4	5	0	0	0
Which being multiplied by	4	5	0	0	0
	16	2	1		
	1	8			
	1	8			
And the superficial content of the side is found to be	19	6	1		
Which multiplied by	4	5			
	76	2	6	5	
	2				
	7	11	4		
Then the solid content is	86	1	10	5	

CHAP. XI.

Directions to measure a Long-Solid piece of Timber, &c. *and other pieces of Timber and Stone.*

IN this case your first business is to find the superficial Content of the Base, having considered first the length and depth, *&c.* of your Solid; as suppose in length it be 3 feet, 4 inches, and the larger or broader side of the Base 1 foot, 1 inch, the Content of the Base or End, as I have said, being found by multiplying the 1 foot, 8 inches, by the 1 foot, 1 inch, the product will be found 1 foot, 9 inches, 8 parts, for the superficial Content of the End, which being multipl'ed by by the length, *viz.* 3 feet, 4 inches, the Product will

will be 6 feet, 2 parts, 8 ſeconds, and it will appear the ſolid Content of that piece of Timber.

To meaſure a piece of Timber or Stone, of many and unequal ſides, &c. by regular Polygons.

SUppoſe your piece intended to be meaſured be Timber of 30 feet in length, and be terminated or ended with two Equilateral Triangles, meaſure in the firſt place the ſides round about with a Line, which allow to be 12 feet in compaſs, then take half the length of one ſumm or breadth, and find the center of the End or Baſe, which is to be done by finding the middle of the Baſe-Line, as likewiſe of one ſide, and from the Angles oppoſite to the Baſe-Line, and that ſide draw two Lines in the middle of them, and where thoſe Lines cut there is a center of the Triangle. then take the neareſt diſtance from the Center to one of the ſides for the other ſumm or depth, and ſo multiply the breadth and depth one by the other, and the Product will render you the ſuperficial Content of the Baſe or End, which being multiplied by the length produces the ſolid Content; as for Example.

The Girt of the three ſides producing 36 feet, the half of that is 18, which from the Center to one ſide, multiplied by the neareſt ſpace, which is 3 feet, 5 inches, 6 parts, 10 ſeconds, and the Product 62 feet, 4 inches, 3 parts, for the end of the piece, or Content of the Baſe, which multiplied by 30 feet, the length of the Baſe, produces 1870 feet, 7 inches, 6 parts, and ſo much is the true Content of the piece.

Of any Board an inch in thickneſs, a foot upon the Superficies contains 144 ſolid inches, and ſo more or leſs according to the thickneſs or number of feet in breadth or length.

In caſe of a round Body, if the Content be required, as a Sphere, whoſe ſolid content is 268 feet, 2 inches, 3 parts and 5 ſeconds, if you would find the length of the Axis, you muſt conſider, that as 22 is to 42, in like manner you will find the ſolid content given; and in conſideration of this you muſt ſay, if 22 give 42, what will then 268 feet, 2 inches, 3 parts and 5 ſeconds give.

F.	I.	P.	S.
268	2	3	5
42			
536			
10727	10	6	
		17	6
11263	11	11	6

124
11264 (512
2222
22

Multiply then the third number by the ſecond, and the Product, as you find it in the Proof, is 11264 feet wanting ſome ſmall matter, which divide by the firſt number in the Queſtion 22, and the Quotient is 512, which is found to be the Cube of the Axis, the Cube Root being 8 feet, which is the length of the ſaid Axis; and thus much for ſolids of this kind.

CHAP. XII

Eaſy Directions for meaſuring Timber or Stone, of any Kind or Form, &c. Being equal in Thickneſs, Square, Round, or Angular, &c.

IN this caſe caſt up the ſuperficial Content as it is found at the Baſe or End thereof, and find by that how many inches it contains, and then work

work in this order, *viz.* 144 are the inches of the ſuperficial Content of the Ends or Sides of a Cubick or ſolid Foo tto a Cubick Foot containin g1000 parts, ſo that the ſuperficial Content of the End of any part or piece of Timber, ſuppoſed or really containing 1, 2, or 300 inches, is to be obſerved and regulated as to the ſolid content of one foot thereof length: For if again you conſider, you ſhall find for 100 inches Content 0, 694 parts for 200 inches, and the double thereof 1, 369 for 300, 2, 083, which is reckoned at 2 foot 083 parts, or for want of readily underſtanding this you may take this Rule, *viz.*

Having your Compaſs ready to take the Circumference of any piece of Timber, or rather you may do it with a Line, and afterwards meaſure it with a Rule, to know how many Inches the Timber or Stone is in Compaſs; which known, compute how many inches and parts will make a foot ſolid, then by multiplying it, with turning over your Compaſs from one end to the other, the ſeveral ſpaces will bring you to a right Underſtanding of the number of feet in Timber or Stone, *&c.* As for a plainer Example, ſuppoſe the compaſs of the Piece be 60 inches, obſerve that 6 inches and 3 parts of an inch be divided into 100 parts, making a foot; ſo conſequently the piece of Timber or Stone being 12 foot long, it amounts to a ſmall matter above 24 ſolid feet: And if the piece exceed above 100 inches in compaſs, then take half the compaſs and divide it by 4; the meaning of which is, that you take a quarter of the Number, and ſo many inches and parts will make a foot of any piece of that compaſs.

CHAP. XIII.

Sundry things to be conſidered in Relation to meaſuring Stackwood and other Matters fit to be known by Countrymen.

A Coard of Wood is accounted 4 feet over, 4 feet deep, and 8 feet long, being found in the main quantity to be 128 cubick feet.

A Stack of Wood ought to be 3 feet over, 3 feet deep, and 12 feet long, and is accounted 128 cubick feet.

5 Feet Timber make a Load of Timber, and a cubick foot is in the ſolid 1728 cubick Inches, a cubick Yard is 72 cubick Feet, or 46656 cubick Inches.

A Brick by Statute ought to be 9 inches long, 4 inches ½ broad, and 2 ½ thick, and 500 to the Load, though the plain Tyles 1000 make the Load.

The Statute perch or pole is 16 feet and a half, 40 ſquare perches are a rood, 4 roods an acre, 30 Acres is a yard-land, and 1 Hide of land is 100 acres, 10 feet every way is a ſquare, or 100 ſquare ſuperficial feet.

300 Feet of 2 inch-planck, 200 feet of 3 inch-plank, 150 feet of 4 inch-plank, 400 of 1 inch and half plank, or 600 feet of 1 inch-plank go to the Load.

If you are deſirous to know what quantity of Hay or Corn a Barn will hold, then multiply the hight to the Beam into the breadth, in yards, and the Product by the length, the Total divided by 20, and the quotient will demonſtrate it; as for the Roof, multiply half the depth into the

depth at the Beam, and that product by the length working it as before, and add it to the other.

Rules for Bakers, Taylors, Laders of Ships, &c.

IN Consideration a Bushel of Wheat is worth 3 Shillings 4 Pence, the penny Loaf weighing 20 Ounces, and the Baker would know what the Penny-Loaf should weigh when Wheat is at 5 Shillings the Bushel; let him thus proceed.

Pence Ounces

If 40 give 20, what will 60 give

40

800

2 (2

80 (0 (13 $\frac{3}{8}$ Ounces, or 13 $\frac{1}{3}$ Ounces.

600

6

If a Taylor would be satisfied how much Cloth or Stuff of 3 quarters broad will serve to line 9 yards of 7 quarters broad; let him thus observe it.

Quarters	Yards	Quarters
7	9	3
	7	
	63	63 (12 Yards answer
		33

As for the Proof observe

Quarters	Yards	Quarters	
3	12	7	
	3		
	63	63 (9	Yards answer
		7	

To know the Burthen of a Ship, take the length of her Keel, the breadth at the Beam, and the depth in the Hold, and multiply the one in the other, then divide the laſt Product by 100, and it gives it Tonage, which is the King's Allowance; but the Merchants not giving any Allowance for Ordinance, Sails, Cables, Maſts and Anchors, which indeed is Burthen but not Tonage; ſo that the Ship being according to the late Model of Building to divide by 95 is thought a competent Number, but take,

The Example of a Ship in this kind.

A Ship being at the Keel in length 75 feet, and in bredth at the Beam 29, the depth in the Hold 13, which Numbers being each multiplied in themſelves, the Product is 2875, and the ¾ part of a Tun, and ſo much you will find to be the true Burthen according to Merchants Loading, *&c.*

Conſiderations in rating Town Taxes, or the like, according to each Mans Eſtate.

PUT the Caſe *G. B.* is poſſeſſed of an Eſtate to the true value of 53 l. *per Annum*, and pays 1 s. 10 d. to a Subſidy or Tax; what muſt according

cording to that Rate in equality, be paid by *B. D.* who is poſſeſſed of an Eſtate to the value of a 100 l. *per Annum*; conſider then

If 35 l. pay 70 d. what is that equally to the 100 l.

1 d		100
7000(200		7000
3555		
33	2	s
	18	(8
	200	(16 $\frac{8}{12}$ or 8 out of 12.
	122	is 8 d.

And ſo found to be 16 s. 8 d.

Directions to know whether Water may be conveyed by Pipes under Ground from one place to an other at diſtance, &c.

IN this take a Pole, and ſet it upright in the Water and mark what part, or how much of it remains above the Water, then place a Pole of equal length at the place whither you would have it conveyed, and at the top of your Pole fix or place the left edge of your quadrant and take a level Proſpect, and if ſo the Plumet cut any Degree, then the place from whence you would convey it is lower than that to which you would have it conveyed, and it cannot be brought to paſs.

How to meaſure a Wood, or Wood-land by the help of the Quadrant.

IN this Caſe ſet up your Mark at each Corner of the Wood, ſo that 3 Marks may be ſeen at one time, and ſo place a Stool at one of the Corners, and lay the Quadrant flat upon it, taking

the

the ſight to 2 of the Marks on either ſide, and ſo upon Paper mark the Degrees of the Angle, and meaſure to the ſaid 2 Marks in ſight, and lay them on the ſame paper by a Line of equal Parts, and ſo proceed to do at every Corner till you have cloſed up the Plat or Wood, which then you may with eaſe meaſure into Acres by your Compaſſes on thoſe Lines.

CHAP. XIV.

The Art and Myſtery of Gauging briefly Compiled and brought to Perfection.

AS for Gauging, it is a kind of meaſuring of Solid, this Difference being only found between gauging or meaſuring of Veſſels, and the meaſuring of other Solids, *viz.* the Content of the latter is taken in Feet, Inches, Parts, and that of the former in Gallons, Pints, Quarts.

Yet before you can well give the Content in Gallons you muſt conſider to find the ſolid Contents in cubick Inches, Parts, *&c.* Which being known, then is it your buſineſs to reduce them into gallons, quarts and pints: And ſeeing moſt liquid Veſſels, ſuch as are the Hogſheads, Pipes, Barrels, Kilderkins, Firkins, *&c.* are form'd as a Spheroides, having equally the 2 Ends cut off; and may in this manner be meaſured.

Take your Meaſurement of the 2 Diameters in Inches, the one at the Bunghole, and the other at the head of the Veſſel, and then the Length within, and by the Diameters found find out the true Area's or Contents of the Circles, adding together the 2 third Parts of the Content of the

greater

greater Circle, and one third part of the Content of the ſmaller Circle, then multiply the Product of theſe 2 Sums, and put them together by the Length of the Veſſel, and this Method will give you the Content of the Veſſel in cubick Inches.

Of theſe cubick Inches note that 231 are accounted the Wine Gallon, and 282 and 3 parts compleat the Ale Gallon.

And thus having given you an Inſight into Gauging, I proceed to Examples.

Example I.

Suppoſe you are to find the true Content of a Veſſel that is 30 Inches Diameter at the Bung, at the Head 18, and in Length 40 Inches, and theſe Inches you would know in Gallons, &c.

	Inches.
Obſerve that the Square of the Diameter 32 is found to be . .	1024
And then, according to Rule, multiply by	355
	5120
	5120
	3072
The Product is found to be	363520

This being divided by 452, according to Rule the quotient is as it is ſet down in the Margin *viz.* 804 Inches and $\frac{11}{113}$ parts of an Inch which being reduced is 804 Inches, 2 Parts, 11 Seconds, 8 Thirds; and ſo much is the Content of the great Circle found to be.

```
( 1
19(12  I.
363520 ( 804
 45222
   455
     4
```

This

	Inches
This known, next the ſquare of the Diameter 18 inches is found to be . . .	324
Which being multiplyed by	355
	1620
	1620
	972
The Product is found to be	115020

Which being divided by 452, the quotient will appear to be 254 Inches, and $\frac{2}{4}\frac{1}{3}\frac{2}{2}$ of an Inch, and this is the true Content of the leſſer Circle at the head conſiſting of 18 Inches Diameter.

```
(2
 20(1
 2462(2
115020(254 Inches
 45222
   455
     4
```

This being known, you muſt proceed to take the 2 thirds of the Content of the greater Circle, and but one third part of the Content of the leſſer Circle, and put them together.

The Content of the great Cir. is	804	2	11	8
And the Content of the leſſer	254	5	7	6
2 third parts of the greater C. is	536	1	11	9
1 third part of the leſſer C. is	84	9	10	6
Which being put together, the Product is found to be	620	11	10	3
Which, being by the length multiplyed, *viz.*	40			
	24800	33	4	
	36	8	10	
The Content of the Veſſel in Cubick Inches is found to be by this Rule	24839	6	2	

Having

Having thus far proceeded I now propose to shew you how many Gallons are contained in this number of inches, parts, &c.

If you are desirous to know the Content of Wine measure, you must then divide the number of inches by 231, and the Quotient gives you the Content as to the Wine Gallons, but if Ale measure be required, then divide the number of inches by 282, and the Quotient renders you the Content.

When you have reduced measure by inches, or more properly inches into measure, then multiply the Content in Gallons and parts, if any remain, by 4, and let the Product be divided by 5, and the Quotient gives you the content required; for by the multiplying 231 by 5, the Product is 1155 inches, which divided by 4, the Quotient is 288 inches, 9 parts, but this latter is meant of Ale measure before the Excise reduced the Ale measure, &c. However the proportion makes it out in the Agreement, for as much as 231 bear the same proportion to 288, as 4 does to 5; but for the plainer Example.

Suppose you are desirous to know how many Gallons of Wine measure is contained in 24839 Cubick inches, then divide the number given by 231, as is directed, and the Quotient will be found to be 107 Gallons, and $\frac{22}{231}$ parts of a Gallon, which reduced is 107 Gallons, $\frac{1}{2}$, and about a quarter of a Pint.

```
( 1
17 ( 22
24839 ( 107 Gal.
23111
  233
    2
```

And

And from hence, if you would proceed to know how many Ale gallons it contains, accounting to the gallon 288 inches, and 9 parts; say as 5 is to 4 so is 288, the Ale gallon, to 231 the Wine gallon. Then multiply 107 gallons and a half by 4, and you will find the Product to be 430, which divide by 5, the Quotient is 86 gallons and near a quarter of a pint.

107 $\frac{1}{2}$
4
428
2
430
3
430 (86 Gal. $\frac{1}{4}$ Pint.
55

And further, in this case if you are desirous to know how many Ale Gallons of old measure, or 288 inches and 9 parts, go to the number of 24839 Cubick inches, 6 parts, without the trouble of first reducing it to Wine measure, then must you multiply the content given in inches by 12 to bring them into parts, and the Product is 298068, to which add the 6 parts that you find over and above in the Content, and so the Product is 298074.

This done reduce the inches of the gallons into parts, by multiplying 288 by 12, and so the Product will be 3456; and to these add 9 parts, and the Product is 3465 parts; and lastly, divide 298074 by 3465. and you find the Quotient to to be 86 gallons $\frac{84}{346}$ parts of a gallon which 84 parts comming to be reduced make 7 inches wanting 2 inches of a quarter of a Pint, and by this method you may find the content of any quantity of inches and parts given. In Ale measure observing to allow to the reduced gallon no more than 282, and 3 parts of Cubick inches.

If you would measure a square Tun or Vessel, multiply together the beeadth, depth and length in inches, and the Product divided by 282 $\frac{3}{4}$ parts, and

and the Quotient ſhews the gallons: And if you would meaſure a Brewers Trough or Cooler, if you find it to be 6 feet long and 1 ½ over; conſider it in the following Example.

viz. 73 inches are the length.
18 inches are the breadth.
576
27
1296
24 The Depth.
5184
2592
31104 The Product.

21
139 (8 Gallons.
3110 (4 (110, 2 $\frac{8}{21}$ parts of a Gallon, or about 3
28222 quarts more than the whole gallons.
2828

And thus I put an end to this work, not doubting but it will turn to the Advantage of the Diligent Reader, who by duly noting and putting in Practice what properly relates to his Affairs, or what ſhall ſeem moſt agreeable to his Mind, will not only find Pleaſure but Profit herein, to the great furtherance of his Undertakings.

Poſtſcript.

IF any ask why Finis *does not ſtand*
As the laſt word long plac'd by Cuſtom's hand?
I tell them Numbers daily multiply,
And have no end, beyond Times flight they fly,
And reach the Orb of Round Eternity.

VALE.

There is lately Printed for Henry Rhodes, *next door to the* Swan Tavern, *near* Bride-Lane, *in* Fleetstreet, *the following Books.*

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